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**Leader-Follower Dynamics: Testing Learning Theory
in a Canadian Energy Company**

by

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ABSTRACT

This research explores follower perceptions of leaders' behaviours relating to learning in the workplace from within a framework proposed by Senge (1990a) in which leaders play the three roles of "Steward", "Designer" and "Teacher" in order to facilitate learning. The data are drawn from a self-administered survey conducted in July, 1999 of 390 full-time employees at a Canadian energy company. The roles were tested using 52 descriptive statements and 5-point Likert scales.

The response rate was 49%. Results revealed the presence of all three roles within which Designer was the weakest at 57% agreement followed by 63% for Steward and 67% for Teacher. Discrepancies in respondent sub-groups (education, gender, occupation and duration of employment) were tested using two-way ANOVAs ($\alpha = 0.05$). Significant differences were found within duration of employment and occupational group. These findings are discussed along with a critical assessment of applying this leadership framework to the workplace.

PREFACE

Learning has been a constant undercurrent in the oft-turbulent waters of my life. I have had, I realize, a life-long addiction toward learning in all its myriad ways of being: formal classroom learning, informal learning or “figuring things out”, incidental learning stumbled upon while doing other things, learning through talking, through play, through pain and grief. What, how and why I learned were often surprises to me, gifts found along the way or exhumed long after the fact. I have often found as I idly mulled over a past experience, that suddenly it would twist upon itself and appear in different guise, providing me with a different angle, a new insight or fresh amusement.

When I entered the workforce I was naïve enough to think that everyone else had the same approach to learning as I did. I assumed that everyone would want me to play with their ideas, wouldn’t mind if I flipped them over to look at their underbellies or prodded at them to see how they moved and squawked.

It did not take long for some informal and incidental learning to foist itself upon me: people did not have the same approach toward ideas as I did, and certainly did not appreciate my presumptuous handling of *their* ideas.

with my blood

I have annointed

this, my first-born child;
and I have perfumed it
with the pungent sweat of
my groaning, heaving
pain.

I did not know how
to give it sight: and so
I weep, for it is blind.

And though it will
never walk, (for in the agony
of birthing, I did not think
to give it legs), see how sweetly
it lies in my trembling arms!
Is it not beautiful, this child
of my heart?

Monstrously misshapen,
what care will you take,
my liege, of my
idea?

-Zoë Agashae, 1999

After recovering from the initial shock of being told I was
insensitive, intimidating and cold, I slowly began to acquire the skills

that now enable me to interact (at least most of the time) in a socially acceptable manner.

The point of this soliloquy is that in my experience, people have been more uncomfortable with learning (or my approach to it) than one might expect at first glance. The discomfort lay not necessarily in the intellect but rather somewhere in their inarticulate emotions, their sense of self, or in the work environment. The work environment can be devised to encourage or hinder learning, and leaders can to some extent dictate or influence the environment, at least at the outset. My own experiences of leadership both as a leader and follower, have underlined the potential impact of leadership on followers' learning. Hence my desire to research the role that leaders play in facilitating learning in business organizations.

The language in this paper is casual and personal. Regarding genderized language, except where specifically mentioned as "his" or "her" as the case may be, I prefer to use the third person singular "they" and "their" rather than "his or her" or "she or he", as in "anyone who wishes to picnic in this park is required to carry *their* garbage to a waste-bin."

I do not subscribe to the notion that the researcher is an island of objectivity, a mere instrument to record reality, or that reality itself is independent of the observer. I am an employee of the organization I am researching. I have conducted my research with compassion and a desire

to discover the truth in what I see. I leave it to my readers to engage, or not, in the dialogue I have begun.

This research has been presented to the following: a Master of Continuing Education cohort at the University of Calgary (May, 1999), the President and CEO at the research site (August, 1999), the “Researching Work and Learning: A First International Conference” at the University of Leeds, England (September, 1999) and the Human Resources Department at the research site (October, 1999).

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My appreciation and thanks are offered here to the people upon whose shoulders I leaned when weary, who helped me get up when I stumbled, who lit my tortuous path with their glowing hearts and belief in my ability. I am deeply grateful for your presence in my life. All of you sustained me in various ways through the grief, anxiety, joy, absent-mindedness, pain, endless revisions, deadlines and general lunacy involved in this Master's work. In particular, I would like to acknowledge my advisor, John Bratton, for his patience and diligence in guiding me through this process. As is said so eloquently in a different sort of master work: my cup runneth over. Thank you.

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LIST OF SYMBOLS, ABBREVIATIONS, NOMENCLATURE

Construct Abbreviations:

DP	Designer/Policy
DR	Designer/Resources
SV	Steward/Vision
TA	Teacher/Reality
TM	Teacher/Modeling
TN	Teacher/Nurturing
TS	Teacher/Systems

Gender Abbreviations

F	Female
M	Male

Occupational Abbreviations

A	Assistant
P	Professional
S	Supervisory
T	Technical

Educational Abbreviations

C	Certificate (post Gr. 12)
H	High School
T	Technical School
U	Undergraduate Degree
G	Post-Graduate Degree

CHAPTER ONE: INTRODUCTION

The adult world is composed to a significant extent of work, work-related activities and the social relationships that arise from work. Other components such as family life, recreation or community activities, though they may be of great *importance* to the individual, often comprise a less significant portion of their lives in sheer time engaged in them than do the former.

Individuals often identify themselves through the work they do. For example when people talk about others they often suffix the person's name with their occupation, as in "Do you know Sandra-the-lawyer, Catharine's friend?" When in social situations, a common and almost expected norm when one is introduced to someone else, is to be asked "what is it you do?" or "where do you work?"

Many, if not most, of our social connections seem to be made through work and work contacts. It is common to hear that married couples originally met through work or work-related activities, that good friends first met through work, or that their participation in recreational activities began through a work-based arrangement. This is not to say that such occurrences are the rule, but that they have been sufficiently frequent to warrant the generalization made at the beginning of this paragraph. "Work and the domestic sphere are intimately and irrevocably

linked in a web that confounds all accounts which are ignorant of it” (Grint, 1991, p. 55).

Work, and particularly paid work, is thus such a large part of adult life, viewed from both time and societal perspectives, that the lived experience of work becomes of interest. Within this sphere of work activity, the idea that learning is an important part of the work day or of the worker’s job duties, has begun to percolate through corporate hallways. Undoubtedly learning does occur in a myriad of ways every day around the world, though it has not been associated with the workplace within this century other than through “training programs”, which have generally been used as preparatory tools. The connection between work and learning has thus been implicit, as in the execution of training programs, or ignored altogether in the assumption that attendance at educational institutions is sufficient preparation for the work world.

This has not however, always been the case. In previous centuries the equivalent educational institutions were churches, trade guilds and monasteries. While they had a learning imperative as society’s repositories of knowledge (Grint, 1991), access to intellectual or academic learning was often restricted to the elite. The masses learned a trade or skill that would provide them with a means of livelihood through the form of apprenticeships or other teacher-pupil relationships that served to impart knowledge from the master to the student. This learning

occurred primarily at the work site, which was often the home of the tradesperson. As universities and other educational institutions became more easily accessible to the masses, both the location and the nature of learning changed from the purely practical slant found in traditional apprenticeships in trade homes and shops, to a more theoretical, abstract focus, imparted in classrooms and seminaries. In particular the British concept of a liberal “gentleman’s” education has had a profound impact on schooling around the world through the mechanism of the British Empire and its corollary, colonialism. To some extent therefore, there has been historically a swing from learning at the workplace to learning in institutions.

Though educational institutions are certainly vehicles of learning today, the extent to which that learning is transferable to the work environment may be argued, and whether and how learning continues into the daily execution of job duties is a topic of debate in both academic and business fields. An indication of this is that since the 1970’s the onus for learning in adulthood has shifted to some extent back to the workplace, to corporations. “The business corporation has become one of the principal educative forces in contemporary society....In the long run, it may be as potent in its educative effects as the curricula of schools and colleges” (Darkenwald & Merriam, 1982, pp. 170-171). Thus the workplace is again emerging as a site of learning.

Within the workplace itself, the nature of work and traditional forms of organization are changing (Morgan, 1986; Grint, 1991; Wheatley 1994; Rifkin, 1995; Handy, 1997). Entire industries exist today that were unheard of ten years ago, such as micro-robotics, cellular or satellite-based personal communications, web-based technologies and bio-remediation (Hamel & Prahalad, 1994). Today's corporations engage in global activities, information flows more freely and quickly across space and time, technology both connects humans and imposes barriers on human interaction, and remote world events impact local experience. These factors all combine to impact worker learning in both content and process. The content of what is learned has changed due to the evolution of new industries - knowledge is being created on a daily basis and the obsolescence of existing knowledge is rapidly accelerating. Regarding the learning process, there are no templates or traditions on which to rely in these new areas and learning has become a generative act rather than an acquisition of existing information.

Economic, technological and demographic factors such as those mentioned above have forced corporations to rely heavily on their workers' knowledge, relationships and creativity in order to retain or enhance the corporations' competitive advantage. This reliance has led to the realization that the development of an organization's human resources, and the strategic deployment of those resources can directly

influence an organization's economic success. "In future, individuals at all levels of management will need to demonstrate that they can add value by generating and developing new knowledge and solutions to problems which cannot be solved by traditional methods" (Hiltrop, 1998). Thus workers are now expected to learn continuously and to apply that learning to the benefit of the organizations for which they work.

This creates a paradoxical situation in which the workers' commitment to the corporation is solicited while they are simultaneously experiencing restructuring or downsizing in the face of external economic and other environmental challenges to the organization. This is not to say corporations do not recognize the value of highly skilled workers. As competing organizations increase their workers' knowledge and skills, the workers themselves become desirable assets. A recent Canadian newspaper article reported that a high technology company in the United States has been "waging a systematic and organized campaign to lure key ... engineers -- and the trade secrets they carry inside their heads -- to its California head office" (Tuck, 1999). Thus what workers know or can learn has become as critical a commodity to their companies (and their competitors) as what they can do.

The work environment therefore poses learning challenges that are immediate and often unprecedented in their urgency and degree of impact on both the corporation and its workers. Today's workplace

demands not only adaptation but also anticipation and the ability to flourish in the midst of a constantly changing environment. Workers who do not learn are often left behind with obsolete knowledge or skills, unemployable in an increasingly fast-paced world.

In fact, adults learn more at their jobs than anywhere else (Carnevale & Goldstein, 1983, as cited in Gorovitz, 1983) which might be explained through the larger proportion of time spent at the workplace, but also highlights the importance of the workplace as a learning site. Welton (1991), offering a critical perspective on workplace learning, describes the workplace as “a complex learning environment” and recognizes the importance of the workplace for adult learning. Within the learning that takes place at work, much of it is informal or incidental. Informal learning occurs when people teach and learn from each other in the workplace or community (Foley, 1999). “Informal learning can be planned or unplanned, but it usually involves some degree of conscious awareness that learning is taking place. Incidental learning, on the other hand, is largely unintentional, unexamined and embedded in people’s closely held belief systems” (Watkins & Marsick, 1992, p. 288). The amount of informal and incidental learning that occurs at work is delineated in a study at Honeywell in which Zemke (1985) found that 80 per cent of learning came from experiences and relationships, and only 20 per cent from training.

It is important to note that the nature of *learning* has also changed. Traditionally, learning at work meant the acquisition of a set of skills or competencies that were then iterated over the span of one's career, presumably with greater expertise with the passage of time. Learning is no longer focussed solely on skills acquisition or transmission of information. In today's work environment, learning encompasses the acquisition of new or different cognitive processes as well as skills. It needs to happen from an operational as well as a conceptual framework (Kim, 1993), meaning that people now need to learn to *think differently* about their problems.

The literature on organizational learning often cites work-related learning as an imperative to business success within the Strategic Human Resource Management (SHRM) paradigm (Marsick & Watkins, 1994; Gilley & Maycunich, 1998; Hiltrop, 1998; Bratton & Gold, 1999). For example, Bratton and Gold point out that "Within most formulations of Strategic HRM, employee development has come to represent a key 'lever' that can help management achieve the substantive HRM goals of commitment, flexibility and quality" (p. 58). Many books and articles purport to have the definitive answer on how to nurture and encourage learning at work (Pedler, Burgoyne & Boydell, 1991; Romme & Dillen, 1997; Kofman & Senge, 1993; Chawla & Renesch, 1995), however as Tsang (1997) points out, "These books adopt a prescriptive stance and

teach managers the way that a company should learn. More often than not, these prescriptions lack a solid empirical foundation...Books on the learning organization are often based on the authors' consulting experience rather than systematic and rigorous research" (pp. 74, 79).

The importance of workplace learning is also reflected in SHRM models (Edvinsson & Sullivan, 1996; Camillus, 1997). For example, the area of organizational learning acknowledges that "for nearly thirty years, organizational learning theory has been an ugly duckling in the pond of organization theory: interesting, but living on the fringes" (Miner & Mezias, 1996, p. 94). In their assessment of 'theoretical and research frontiers' in learning research, Miner and Mezias comment that "the ratio of systematic, empirical learning research to learning theories is far too low" (p. 94) and that "organizational learning now stands on the threshold of moving center stage in organization theory"(p. 90). As Camillus (1997) remarks, "the only sustainable competitive advantage for an organization is the ability to learn faster than its competition" (p. 3). Thus learning is seen to be critical not only to individual survival and employability but also organizational success.

In popular management literature as well as in academic journals the concept that individual and collective human knowledge is an asset to the corporation, and that individual and collective learning contributes significantly to the corporate "bottom line", has resulted in a great deal of

interest and speculation about how corporations can benefit from both. The terms “Learning Organization”, “Intellectual Capital” and “Knowledge Workers” are now commonplace in SHRM discourse. “The only comparative advantage of the developed countries is in the supply of knowledge workers” (Drucker, 1997, p. 22). “Increasingly, successful organizations are building competitive advantage through less controlling and more learning - that is, through continually creating and sharing new knowledge” (Senge, 1997, p. 32). “Being more efficient/effective than one’s competitors will require a well-trained and highly motivated workforce capable of using their heads to improve their work beyond the normal capabilities available through the standard application of technology” (Makridakis, 1996, p. 19). “Knowledge has become the single most important factor of production, managing intellectual assets has become the single most important task of business” (Stewart, 1997, p. xii).

Within the realm of learning in business organizations, Senge (1990b, 1997) has analyzed organizations to discover how successful enterprises adapt to change and thrive within the dynamic, mutating environment of a global market. It is his assertion that organizations that succeed in this environment do so because of their ability to learn from and adapt to their changing circumstances. His popular work, *The Fifth Discipline*, explores the theory and practice of creating “Learning

Organizations". Senge (1990a) defines an organization's ability to survive in terms of its ability to learn. Those organizations that can learn new ways in the face of change are those that will survive.

Real learning gets to the heart of what it means to be human. Through learning we re-create ourselves. Through learning we become able to do something we never were able to do. Through learning we re-perceive the world and our relationship to it. Through learning, we extend our capacity to create, to be part of the generative process of life. There is within each of us a deep hunger for this type of learning (Senge, 1990a, p. 14).

This learning occurs through five disciplines, or ways of being. Though these disciplines are ordered serially, Senge emphasizes they are all necessary and that it is the interaction between them that creates a "learning organization". The first discipline, personal mastery, states that we must continually clarify what is important to us: we must have a personal vision. We must also continually examine our current reality in light of that vision. The difference between the current reality and our vision generates a creative tension that moves us toward achieving our vision. The result of these two activities is a person that is continually learning. The second discipline relates to "mental models". These are "deeply held internal images of how the world works, images that limit us to familiar ways of thinking and acting" (p. 134). If new insights or changes conflict with our mental models, they will be ignored, discounted, or sabotaged. In a learning organization, we need to learn to change models; to adopt a mental model of continuous learning. To be

effective we need to learn to notice our jumps from observation to generalization, to articulate what we normally do not say, and to be aware of the distinction between what we say and what we do. The third discipline is shared vision. "A shared vision is not an idea. It is not even an important idea such as freedom. It is, rather, a force in people's hearts, a force of impressive power. ...At its simplest level, a shared vision is the answer to the question "what do we want to create?" Shared vision is vital for the learning organization because it provides the focus and energy for learning" (p. 206). The fourth discipline is that of team learning. It is "the process of aligning and developing the capacity of a team to create the results its members truly desire. Team learning has three dimensions: the need to think insightfully about complex issues, the need for innovative, coordinated action, and the role of team members on other teams" (p. 236). The fifth discipline is systems thinking, the ability to see things in their entirety. This is the basis of all the disciplines of the learning organization. "Without systems thinking there is neither the incentive nor the means to integrate the learning disciplines once they have come into practice. As the fifth discipline, systems thinking is the cornerstone of how learning organizations think about their world... Nature is not made up of parts within wholes. It is made up of wholes within wholes" (p. 371). These five disciplines combine actively in organizations that learn continuously, and it is

Senge's contention that all five are required for effective organizational learning to occur.

Though learning organization philosophy has been widely popularized throughout the North American popular and academic business literature, it has been subject to little critical scrutiny (Fenwick, 1998). For example, the power relationships and their impact on individual choice in learning, the organizational agenda in promoting learning and biases toward growth, competition and profit are all implicit in the learning organization philosophy, but are not often articulated or discussed in popular business literature.

The target group for continuous learning in the workplace neglects large groups of people who are implicitly "other" but whose individual work-learning struggles continue to produce knowledge, whether or not these kinds of knowledge are recognized by the learning organization. Meanwhile, learners with special needs, disabilities, low literacy skills or other characteristics which don't fit the learning organization's preferred approaches (self-directed learning, critical reflection, risk and innovation and dialogue) are in danger of being discarded altogether (Fenwick, 1998, pp. 146-147).

One component of learning organization philosophy, and particularly of Senge's model, that has received little empirical attention is the role of organizational leaders in creating or facilitating learning in organizations. This study focuses on Senge's (1990a) proposal that leaders need to be teachers, designers and stewards in order to facilitate individual and organizational learning. "[Leaders] are responsible for *building*

organizations where people continually expand their capabilities to understand complexity, clarify vision, and improve shared mental models -- that is, they are responsible for learning" (p. 340).

Within this study leadership is viewed as a relationship between the leader and follower, in which influence, power and gender may play critical roles in determining the extent and degree of learning that occurs. The focus of research is on followers' perceptions of leader behaviour rather than leaders' perceptions of their own behaviour.

Through assessing followers' perceptions, this study endeavours to validate the presence of the leader roles of designer, steward and teacher, and to identify components of leader behaviour that contribute toward creating learning environments. It will also identify gaps in our knowledge, and discuss the difficulties inherent in applying frameworks such as this to the workplace.

CHAPTER TWO: LITERATURE REVIEW

The sun has frozen time
 outside, in the stone courtyard.
 Frozen inside stone-walled rooms,
 ivy-shadowed students sit:
 Teacher is teaching.
 -Zoë Agashae, 1996

It is critical to establish a clear understanding of the term “learning” within the context of this research. Psychological definitions of learning take two approaches, behavioural and cognitive. Their respective definitions reflect this bias: “learning is a relatively permanent change in behaviour due to experience” (behavioural) and “learning is a relatively permanent change in mental associations due to experience” (cognitive) (Ormrod, 1999, p. 3). Merriam and Caffarella (1991) add two more orientations to human learning, namely humanist and social learning. Humanists view learning as a form of self-actualization, both affective and cognitive. Learning leads to personal growth and development. Social learning posits that learning happens through observation and is vicarious in nature (Bandura, 1976, as cited in Merriam & Caffarella, 1991). This form of learning happens “as a function of the interaction of the person, the environment and the behaviour” (p. 139). That is to say, adult learning takes place within a socio-cultural context that cannot be

ignored. "Adult learning does not occur in a vacuum....[It is] to a large extent determined by the society in which one lives" (p. 20).

While humanist and social learning are interesting perspectives, they are not *definitions* of learning as a human phenomenon, but rather are descriptive statements of the process, the motivation or cognition surrounding learning. These definitions do however point to the importance of recognizing that all learning happens in a context that includes cultural, social, and individual emotions, interpretations, influences or determinants. In this sense learning is inevitably contextualized and situated within the framework of the individual learner. For the purpose of this study, learning will be defined from the perspective of the learner rather than that of an external observer. That is to say, learning will be said to have happened if the learner identifies it as having happened, rather than by the researcher evaluating whether it has happened by imposing some external criteria.

Within the workplace, learning is often confused with training. The confusion arises from the fallacious assumptions that first, attending some kind of formalized training program necessarily results in learning, and second, that formal training is the sole vehicle by which learning occurs (Stamps, 1997). This positions the worker/learner as a passive receiver of information, and espouses the notion that learning happens

automatically and is something that is *done to* the learner by the trainer. Training and learning are not, in an ideal world, mutually exclusive, but are rather complementary: presumably learning happens at least in part through some form of training, though not exclusively so: learning may happen as a result of deliberate, formal training, or informal situations, or emerge incidentally out of another task, process or relationship. Further, training can have somewhat sinister connotations, especially if corporate training programs indoctrinate workers into the corporate culture and promote a single acceptable way of working. "Training programmes, rather than developing diversity and innovation, are framed by singular, compliance-seeking structures and technologies - including the language of 'empowerment'" (Garrick, 1998, p. 68).

With due consideration to these distinctions, for the purposes of this research, learning then can be defined *a subjective, iterative process of change, situated in a socio-cultural context, that both requires and results in consciously recognized transformations of cognition and perhaps, but not necessarily, in behaviour*. Therefore, this study will not evaluate the learning activity itself either in quality or quantity, but will instead investigate the circumstances in which it arose, with particular regard to leader behaviour.

While learning is often associated with formal instruction in a classroom setting, as mentioned earlier, most workplace learning is

informal or incidental and as such is largely a subjective experience. For this reason, the study will not evaluate the efficacy of corporate training programs or hours of classroom instruction, but will rather focus on worker perceptions of their learning while working, regardless of whether that is informal or incidental - though it must be noted that the research activity of measuring leader impacts on learning in this workplace may serve as a catalyst for workers to become conscious of the existence of incidental learning opportunities or events.

A review of developmental psychology and adult learning literature (Tennant, 1990) finds a common theme in the orientation toward personal growth as a philosophically desirable attribute, a comment that is reiterated by Courtenay (1994). This assumption, whether articulated or implicit, may be challenged in a practical sense: in many organizations or indeed in society at large, many people are not only *not* interested in personal growth, but may even view such a desire as a sign of dysfunction. This is similar to the stigma associated in some social groups with “seeing a shrink” (accessing the services of a therapist or psychiatrist) for the purposes of personal growth. The stigma connotes a perceived inadequacy on the individual’s part to “deal with” their lives. Nevertheless, it is important to acknowledge this inherent bias toward growth in approaches toward theorizing in adult learning. Several adult

learning theories are pertinent to this inquiry and are discussed in greater detail below.

Adult Learning

Adult learning literature offers three key areas of interest to workplace learning: proposed principles of adult learning, the concept of reflection and critical thinking, and perspective transformation.

Malcolm Knowles was one of the first theorists to suggest a framework for adult learning (Knowles, 1970, as cited in Knowles, Holton & Swanson, 1998). His term for adult learning, andragogy, has since been widely adopted; however theorists are still undecided about its definition. Influenced by the work of Eduard Lindeman (1961), Knowles proposed five principles of adult learning which he felt were distinct from those applied to children's learning.

To summarize, Knowles' principles for the androgogical model are, first, that adult learners are self-directed, and encounter cognitive dissonance when placed in traditional learning environments: their experience of learning has been as one dependent upon the teacher to teach, yet their desire as adults is to participate and direct their learning activities. Second, adults have a store of life experience that influences their learning, by adding depth and richness but also by defining their

approach and thought patterns in processing new information or skills. In addition, adults identify themselves through the academic, work and life experiences that they have had, and this also influences their learning. Third, adults become ready to learn when they identify a need within themselves and see the benefit of the learning in their own lives. Fourth, adults engage in learning with a particular orientation, depending on the need they have identified, which may be life-centered, task-centered or problem-centered. Fifth, adult motivation to learn is internally rather than externally generated. Over the years, Knowles has realized that neither the pedagogical or andragogical model are “the only answer” to learning situations but rather that both approaches are valid in differing situations (Knowles, et al., 1998).

Relating these five principles to learning in the workplace, one might expect that workers (being adults) are, or ought to be, self-directed, be informed by their previous experiences, learn most effectively when they see benefit for themselves in the learning, have one of the centering orientations of life, task or problem, and be internally motivated. Perusal of this list identifies problems in relating these principles to life at work. From a theoretical perspective, andragogy (and Lindeman’s work) was based on experiences oriented toward basic education of adults, upgrading, and formal, institutional learning. These

circumstances cannot be easily extrapolated to work, since the fundamental premise under which people are learning is different: at work, learning can be mandated, and thus the choice to *participate* is removed from the learner (the choice to *learn* is not - though the consequences of choosing to not learn may be harsh, namely job loss). This difference in personal power spills into the rest of the learning experience and will be explored in more detail throughout this review.

Regarding the principles of andragogy, objections can be made to their content as well. First, one cannot assume all workers are self-directed, especially if their working lives have been conducted in an environment of rigid procedures, rules and reporting relationships. Second, “life experience” may not automatically provide a *beneficial* influence upon adult learning: those who have had traumatic experiences of learning as children will carry their impressions and pain into their adult lives. Third, “seeing benefit” for oneself may not be a primary driver in workplaces where learning may be mandated by business need and the changing marketplace - in this situation, workers may be learning skills or technologies that will result in restructuring and job loss. This example applies also to the last principle, that adults are internally motivated. While indeed the choice of whether to learn or not learn is an individual one, learning itself does not necessarily occur in isolation from others at work, particularly with respect to leader

influence. A leader's behaviour relating to learning permeates their work group. For example, leaders may influence the choices workers make about whether or not to engage in learning activities through either rewarding, ignoring or punishing those activities.

Knowles' principles have been contested by theorists and researchers over the years. Pratt (1988) critiques the principle that adult learners are self-directed: "Andragogical practice should acknowledge and accept of its learners both self-directedness and its obverse, dependency" (p. 161). Whether self-direction is or is not a uniquely adult trait as well as its acceptance as a learning construct is also in question (Joblin, 1988). "Self-directedness is presumed to be good...yet many beliefs and much of the popular writing about self-directed learning are based on folklore and/or theory, rather than disciplined enquiry or research" (p. 115). Joughin (1992) makes a similar point from within the psychological framework of field-dependence and field-independence, and concludes that "it is clear that the assumption that all adults have an inherent capacity for self-directed learning cannot be sustained" (p. 13).

The degree to which a learner maintains control over their learning has been suggested as critical in the self-directedness of adults (Long, 1990). The degree of control can vary from one individual to another, and is not implicit to every adult or every situation. Pedagogically structured

learning situations will not lend themselves to self-directedness regardless of the adult's orientation unless the teacher/tutor voluntarily relinquishes that power and control to the learner. In a similar vein, Garrison (1992) compares self-direction and critical thinking to responsibility and control issues. "Only through continuous and critical dialogue between learner and facilitator can a dynamic and optimal balance of control be realized" (p. 144). This has significance when examining leader-worker relationships and the power/control issues surrounding leader-as-teacher: to what degree does the leader relinquish or share control? How does this help or hinder workers' learning?

The notion that adults have a need to participate in planning their learning is also contested. A study conducted by Courtenay, Arnold and Kim (1994) found that "participation in planning does not significantly influence achievement, satisfaction or classroom environment. Neither does classroom environment significantly affect achievement or satisfaction" (p. 291). From this study it would appear that even when workers are self-directed in organizing their learning activities, the result of such would not necessarily guarantee any higher quality of outcomes.

Knowles' second principle of prior life experience informing learning relates to a separate line of enquiry entitled "experiential learning" (Jarvis, 1987; Wolfe & Kolb, 1991). In Jarvis' model, all learning

is based on experiences encountered by the individual. Any experience can be either educative or miseducative, meaning that the individual may or may not learn from it. In a work context, this model has particular relevance since the multitude of experiences encountered by workers may serve as a fecund source of learning, or may not serve as learning opportunities at all. The difference lies in the attitude of the learner, and underlines why it is critical to assess learning from a follower perspective. According to Jarvis, the *meaning* of the experience is attributed by the learner. This attribution is done through deliberate reflection upon experience: "reflection is an essential phase in the learning process whereby people explore their experiences in a conscious manner in order to lead to a new understanding and, perhaps, a new behaviour" (p. 168). Reflection, in turn, cannot happen if the experience is so new or so familiar that it is alienating: an example of over-familiarity is working on an assembly line. "There is nothing in the experience upon which the mind might reflect, there is little that can be meaningfully added to the self's stock of knowledge; learning is restricted, the experience is alienating and the development of the self is stunted" (p. 170). This has particular relevance to job design in the workplace. If jobs are too repetitive, with too limited a range of activities, learning will be hindered. Conversely, "high quality jobs, which incorporate work design principles of variety, high skill, interdependence

and autonomy can satisfy the tenets of adult learning...and best enable workers to experience “transformational” learning” (Bratton, 1999, p. 491).

A critical assessment of experiential learning is presented by Lomi, Larsen and Ginsberg (1997) who assessed the impact of individual experiential learning on organizations from a systems perspective. They comment that “experience is a poor basis for learning primarily because the understanding of structural relations between individual actions and their aggregate consequences is confounded by nonlinear dynamics, time delays, and misperception of feedbackOrganizations and individuals learn from experience but experience requires interpretation” (p. 561).

In other words, individuals must be able to see the connections between seemingly disparate events in order for learning to happen - a sightedness that does not happen automatically. Senge uses the term “systems thinking” to represent this ability to see connections, and places the responsibility for this sightedness squarely on the shoulders of the leader as designer. “Crucial design work for leaders of learning organization[s] concerns integrating vision, values and purpose, systems thinking and mental models”(1990a, p. 343). While Knowles’ framework has created much dialogue, none of the principles have been conclusively proven to be either necessary or sufficient for learning to occur. They are nevertheless widely accepted in adult learning literature.

Mezirow's (1977, 1981) theory on adult learning focuses on the transformation in perspective that is brought about through reflection upon experience, and the modification of existing paradigms to accommodate new experiences. In essence, Mezirow's assertion is that paradigm shifts are required for learning to occur. He explains perspective transformation as "the emancipatory process of becoming critically aware of how and why the structure of psycho-cultural assumptions has come to constrain the way we see ourselves and our relationships, reconstituting this structure to permit a more inclusive and discriminating integration of experience and acting upon these new understandings" (Mezirow, 1981, p. 6). Perspective transformations are achieved "through reflection...a deliberate assessment of the justification of our beliefs, ideas and feelings" (Mezirow, 1993, p. 187). This is a useful connection to Senge's (1990a) concept of mental models. "The problems with mental models arise when they are tacit -- when they exist below the level of awareness" (p. 176). The role of leader as teacher then is to help workers to unearth existing mental models in order that a perspective transformation might occur. In Senge's model, unearthing mental models occurs through dialogue or the conversations that people have with each other about their ideas and assumptions. Dialogue in turn is a balance of inquiry, or questioning, and advocacy, or persuading.

In order for mental models to be exposed, both inquiry and advocacy are required.

Perspective transformation has been critiqued by Boyd and Myers (1988) in their Jungian-based theory of transformative education. In this theory perspective transformation's limits are exposed through an exploration of the psychological meaning of the components of the theory. For example, perspective transformation is concerned with the ego's control and domination over the world, and the removal of limiting psycho-social structures (mental models) that inhibit self-actualization. Boyd and Myers contend that there is a much broader experience of self apart from the ego that informs human development, and that focus on the ego accounts for only a portion of reality. "Critical reflectivity" in the perspective transformation model is compared to "discernment" in the transformative education model. While critical reflectivity is concerned with rational insight based on a deconstructivist outlook, discernment seeks to integrate and leads to "a contemplative insight, a personal illumination gained by putting things together and seeing them in their relational wholeness" (p. 274). While perspective transformations occur through a cognitive process involving problem-solving and action-planning, discernment happens through receptivity, recognition, and grieving, a dialogue with extra-rational, intra-psychic forces. In examining these two points of view, the workplace might be a catalyst for

both experiences to happen, however it is more likely that perspective transformation, which deals with the individual's relationship with the outward world, would happen prior to the deeper, more integrated perspective of transformative education. It may well be that both theories explain two different aspects of human development, namely differentiation and integration, a comment that is also made by Boyd and Myers in their assessment.

The terms "reflection", "critical reflection" and critical thinking" have been used variously and interchangeably in adult learning literature. While reflection seems to be the taking of time to think about one's experiences, critical reflection and critical thinking describes the kind of thinking that one should *do*. However, these terms are not used consistently in this way. For example, Daudelin (1996) uses the term "reflection" when by the above criteria it should be referred to as critical thinking. Various approaches to this topic are explored below.

The use of critical thinking as a tool for facilitating adult learning and improving organizational performance is recommended by Brookfield (1987). Critical thinking is "developing an awareness of the assumptions under which we, and others, think and act" (p. ix). Thinking critically is the object of reflection, in Brookfield's model. "When criticism of prevailing workplace norms is encouraged in some form of collective

forum...leaps of imagination that take companies beyond currently accepted modes of production are more likely to take place. Critical thinking, then, can be seen as the central element in improving organizational performance" (p. 139).

The difficulty inherent in engaging in critical thinking while still maintaining existing relationships and roles in one's community is not often articulated in learning literature (Brookfield, 1994). In workplace learning, critical thinking is often viewed unfavourably since it tends to challenge established procedures, relationships and power structures. In this sense, this component of learning, though necessary for perspective transformation, may be actively discouraged through overt or covert means.

Daudelin (1996) conducted a study to evaluate learning from experience through reflection. The study discusses the reflection process and how it can be used to learn. Forty-eight managers from within a Fortune 500 firm were studied. Daudelin found that greater learning occurred in groups reflecting with coaches or on an individual reflection basis, than in groups reflecting with peers, or not reflecting at all. It seems from this study that the provision of time to reflect is beneficial, as is the provision of a coach, and that merely gathering with peers and not reflecting at all results in less learning than the first two options. Of salience to this point however is that reflection is a skill that differs from

“just thinking” arbitrarily, without an appropriate framework. The role of leader then would be to provide the resources necessary for productive reflection, through provision of time and/or coaching. In reality, however workplaces tend to be action- and results-oriented and may not value time spent on “sitting around thinking”.

The concept of critical thinking is ambiguous and Garrison (1991) notes that unless it can be defined clearly, will continue to cause dissension among theorists and difficulty among adult education instructors attempting to apply the concept. “In the weak sense critical thinking is a set of discrete micro-logical skills concerned with technical reasons, while in the strong sense critical thinking is a set of integrated macro-logical skills concerned with insight and the development of emancipatory reason” (p. 290). He notes that the adjective of criticality implies “a certain skepticism, or suspension of assent, towards a given statement, established norm or mode of doing things” (p. 289). The intent of skepticism, however is not merely negativity, but is intended to arrive at alternative solutions or points of view with the purpose of arriving at a better decision, insight or resolution to a problem.

Garrison also points out the relationship between critical thinking and reflection and suggests a process for critical thinking that involves problem identification, problem definition, exploration, applicability and

integration. He then relates these to Schon's (1983, as cited in Garrison, 1991) ideas of reflection-in-action and concludes that "problems in the real world are not well defined and structured and cannot be resolved simply by applying professional knowledge and 'technical rationality'. In the real world competency and knowledge is acquired in the swampy lowlands of messy and ill-defined problems found in the indeterminate zones of practice. Through the concepts of knowing-in-action (tacit knowledge) and reflection-in-action (rethinking tacit knowledge) the individual develops competency" (p. 295).

The learning process is explored in the theory of single- and double-loop learning (Argyris, 1991). Single-loop learning is related to "fixing" problems by addressing the superficial symptoms that are present. Double-loop learning focuses on the underlying rules, assumptions and causes that resulted in the presenting problem. It is double-loop learning that is needed in organizations to solve problems that are caused by fundamental assumptions about reality. Double-loop learning can be attained by reflection, or ideally, as Schon (1983, as cited in Garrison, 1991) notes, by reflection-in-action. Reflection by its very nature, however, requires time and perhaps some degree of solitude, neither of which are easily found in today's work environment.

Marsick (1988) has explored learning in the workplace within the framework of the need for reflectivity as a critical component for effective

learning to take place. She frames various researchers' opinions about how adults learn by variables such as the type of learning undertaken and the paradigm from which learning is viewed, whether that is technical, strategic or interpretive. She concludes that the various paradigms are valuable and appropriate to different situational contexts. Her assertion is that it is critical reflectivity that uncovers fundamental assumptions that people have about the world. Those assumptions can hinder learning and for that reason, they must be articulated and changed if necessary. Marsick suggests a new paradigm for understanding and designing workplace learning that includes "a broadening of the instrumental focus of learning, integration of personal and job-related development, an organizational model that functions as a learning system, a focus on group as well as individual learning, a concern for critical reflectivity and for problem setting as well as problem solving, emphasis on informal learning, and development of the organization as learning environment" (p. 194). This recommendation appears similar to prescribing "less of a headache" to a person with a headache - while it does indeed point to the solution, it is so impotent and broad that it irritates rather than soothes the troubled soul. What it does emphasize however is the complexity of the phenomenon of adult learning in the workplace. Thus the concepts of reflection and critical thinking are widely accepted as necessary, if not sufficient, for adult

learning to occur. In the workplace however, in spite of its supposed criticality to the learning process, reflection is often a very low priority activity, and may be viewed as “unproductive” or “sitting around doing nothing” and treated unfavourably by peers or supervisors.

Learning as an activity requires the expenditure of personal resources in the form of time and energy. McClusky’s Margin Theory (cited in Hiemstra, 1993) is unique in that it addresses the impact on personal resources of engaging in learning. In Margin Theory, an adult’s ability to learn is influenced by the demands of day-to-day living, the “load”. The energy itself, the “power”, is potentially available to use either to cope with the load or for learning. If daily stresses are high, more energy is used for coping and there is less energy to spare for learning. The key in remaining effective is to maintain a “margin” of power to use for unexpected crises, learning, or perhaps pleasurable activities. This is an important concept to keep in mind when considering learning in the workplace, since the pace and demand of our work lives are significant enough to potentially deplete any power margin we might otherwise have used for learning. From a leadership perspective, this theory points to the importance of being aware of total load in workers’ lives. This may be detected through casual conversation or deliberate inquiry, but however it is executed, such information may indirectly indicate the worker’s

ability to assimilate additional change or learning. Workplaces are beginning to address load issues through programmes in various guises which emphasize “work-life balance”, “sabbaticals”, “time-in-lieu” (of overtime pay), or “worker wellness”.

Goodnow (1982) proposed a contingency theory of education that suggested the techniques adopted by educators should depend upon the particular circumstances in which they found themselves teaching. In particular, Goodnow uses Fleishman and Harris’ (1962, as cited in Goodnow, 1982) characteristics of leadership behaviour, consideration and initiating structure, to explore a theoretical model in which to frame pedagogy and andragogy. In her model, pedagogy aligns with initiating structure and andragogy aligns with consideration. She also suggests that Blake and Mouton’s managerial grid (1976, as cited in Goodnow, 1982) can be used in educational settings to determine appropriate approaches to instruction. While the managerial grid has subsequently been extensively developed by Hersey & Blanchard (1993) into a situational framework, Goodnow is one of the few educational theorists that explicitly refer to and align with a behavioural leadership framework. While this theory shows promise in its wide applicability across varying situations, it seems simplistic in its dichotomous categorization of leader behaviours and teaching styles and does not

accommodate leadership as a process or relationship between the leader and followers. Such an approach also places much of the power in a learning situation in the hands of the leader, implying that in the role of “teacher”, the leader should in some omniscient way be able to ascertain the dynamics of each situation and apply different strategies appropriately. The student (worker) merely executes their work, a phlegmatic, non-participatory exemplar of blind ignorance, who is “taught” by the enlightened leader.

A model for adult education that is situated in practice is suggested by Cervero (1992). Based on the assumption that adult education is conducted in order to “improve professionals’ ability to engage in wise action” (p. 98), Cervero suggests a focus on development of practical knowledge, and the processes by which this knowledge is used. This suggests a strategic shift from teacher-oriented methodologies to ones that are more learner-oriented. Cervero also recommends a developmental methodology to assist learning based on a cognitive apprenticeship approach developed by Collins, Brown and Newman (1989, as cited in Cervero, 1992), namely modeling, coaching, scaffolding, articulation, reflection, and exploration. The first three methods “would help the learner develop their practical knowledge in an area in which they were unfamiliar through processes of observation and guided and supported practice. The next two are designed to help

learners gain conscious access to and control of their own knowledge and reasoning processes as well as that of experts. The final method is aimed at encouraging learner autonomy in defining and formulating problems to be solved" (p. 99). This model assumes that learning takes place within a community, that knowledge is situated, interactive, and relational. It also explicitly comments on the need to model and coach for learning behaviour, a point that is also made in leadership theories (Senge, 1990a; Covey, 1992).

Certainly the concept of practical knowledge has resonance in the workplace. Terms such as "learning on the job", "learn as you go", or "learning curve" all refer to the ultimate bar by which learning is measured at work, namely one's ability to act, one's "work experience". It is in acting that one's practical knowledge is demonstrated, since this knowledge is embodied and sometimes inarticulate (Hager, 1999). The implication is that learning through acting is often the means of choice in the workplace - in this sense practical knowledge is paramount in ensuring organizational and individual success.

The idea that learning is facilitated by a sense of community experienced by the learners (Brookfield, 1987; Kofman & Senge, 1993; Stamps, 1997) is of salience to learning in the workplace since accomplishing work objectives often involves interaction with others. Over time and continual contact, a series of relationships are built and

may develop, in the case of stable groups of people, into a feeling of community and shared purpose. Whether the sense of community, belonging, safety and common purpose is experienced or not experienced might affect workers' learning. In particular, leaders can influence the sense of community with the extent to which they strive to articulate and disseminate a shared vision, create safety or develop an identity for the work group. "Without communities of people genuinely committed, there is no real chance of going forward....It is little coincidence that virtually all spiritual disciplines, regardless of culture or religious setting, are practiced in communities. Only with the support, insight, and fellowship of a community can we face the dangers of learning meaningful things" (Kofman & Senge, 1993, pp. 6, 20).

Another approach to adult learning has been to attempt to identify the ideal learning experience. Vaill (1996) asked a group of twenty experienced human resource professionals the following question: Think of someone whose learning you care a lot about, and suppose they are about to undergo a major learning experience. What characteristics would you want this experience to have for them? Responses identified both relational/affective concerns as well as content/process concerns. For example, some of the relational/affective concerns included freedom to question, to disagree, the presence of genuine love and concern, a

non-judgmental climate, a nurturing environment, tolerance for mistakes, and no doctrine of “one right way” present either in what or how to learn. Among content/process concerns were: the experience meets the individual’s needs, participants use their own experiences to learn, the subject matter is interdisciplinary, learners have time to reflect and an opportunity to teach. Some of these responses must have been biased as a result of paradigms held by the practitioners themselves. As human resource professionals they may have already heard of adult learning theories and thus informed their own ideas of what would constitute an ideal learning situation. Also, the question seems to have generated prescriptive rather than descriptive responses - it is unclear whether the subjects were suggesting what *ought* to happen in an ideal situation rather than observing these factors based on their own experiences.

Interestingly, as many of the desirable qualities in an ideal learning situation related to affect as they did to content or process. Too often in business organizations very little attention is paid to affect. It can be inferred that experiencing an ideal learning event in an organization is not likely to happen without some degree of “engineering”. This engineering or architectural work may be accomplished most expediently by leaders, yet it is the followers that will “live” in that space - and will experience it as ideal, or not.

Another potential defining factor in learning relates to the gendered experience of work itself. Women's experiences of learning and working are different from men (Tannen, 1990; Anderson, 1995; Belenky, Clinchy, Goldberger & Tarule, 1997; Wajcman, 1998). According to Belenky, Clinchy, Goldberger and Tarule, women have been under-represented as learning research subjects and thus learning theories may be of less value in defining female experiences of learning. In particular, the historical and institutional public silencing of women's voices has resulted in women having fewer same-gender role models, and subsequently less "voice" and a greater experience of "silence", or the inability to articulate one's thoughts, either due to assumptions of non-validity, inappropriate self-images of inadequacy and non-importance, or opportunity. In studying leader roles in the workplace, it seems therefore reasonable to assume that women's perceptions of leaders and their learning needs might differ from those of men. Similarly, women's styles of leadership are thought to differ from those of men (Schwartz, 1989; Rosener, 1990) - though a more accurate assessment might be made by referring to "feminine" and "masculine" styles (Anderson, 1995) - and thus might have different influences on learning in their followers. However, Wajcman (1998) suggests that women often repress any obviously "feminine" characteristics when working in a male-dominated

environment "...it should come as no surprise that many women managers adapt and survive by being more male than the men....The point is that the qualities associated with effective management are not gender neutral" (p. 76). It is important to question then whether followers' perceptions of female leaders will differ significantly than their perceptions of male leaders.

A critical component of an inquiry on the leader's role in *facilitating* learning is the identification of potential *hindrances* to learning. Sterman (1994) identified barriers to learning which are comprised of dynamic complexity, limited information, misperceptions of feedback, flawed cognitive maps of causal relations, erroneous inferences about dynamic unscientific reasoning, defensive routines, and implementation failure. Similarly, in a study of team learning Kasl, Marsick and Dechant (1997) remark on the importance of relationships to both individual and team learning. "Integrating perspectives involves much more than being willing to listen to the viewpoints of others; it ultimately involves enabling others to express their views and actively seeking out views that are disconfirming or challenging. In synergistic learning, members acquire a deep capacity to enter into the mind-set of others" (p. 242). This has obvious application to individual learning since it is the interaction of the

individuals in a team that produces team learning. If the individual is unskilled in learning, by definition the team cannot learn.

Prior experiences of learning can act as barriers to further learning. Vaill (1995) discusses institutional learning as a barrier to continuous learning since “institutional learning is clearly more of a system for indoctrination and control than it is for learning....At bottom, IL [institutional learning] does not teach learners very much about themselves as learners. They graduate from IL systems profoundly ignorant of the learning challenges that they will face for the rest of their lives. They are disempowered [from] the very “life long learning” of which IL speaks so fondly” (p. 36).

Organizational culture itself can be a barrier to learning as can power relations (Schein, 1996; Salaman & Butler, 1990). “Organizations display what can be thought of as “learning disabilities” or what Argyris might call “defensive routines” that get in the way of the kind of second-order learning that may be needed in today’s turbulent world (Argyris & Schon, 1996)” (Schein, 1996, p. 235). Changing the culture then is as important as individual action in order to facilitate learning. A study on resistance to learning among managers found that this resistance arose from their previous organizational experiences and that these needed to be reconciled with the messages received in their training programs (Salaman & Butler, 1990). Resistance to learning may also come from

jealousy, machismo, partnership or paternalism (Snell, 1990) which in turn result from having suffered distress but not learning from it, fear of perturbation, obsession with short-term results, and lack of an appropriate world view. Laiken (1997) explores barriers in implementing collaboration in organizations by examining the processes that support collaborative outcomes. In her assessment, the ability to dialogue, to surface and challenge mental models and to manage polarities are the critical skills to ensure that collaborative design succeeds.

These adult learning studies point to the importance of identifying resistance factors in learning and removing these in order to facilitate workers' learning. In Senge's philosophy this would align with challenging mental models and providing supportive infrastructure, the assumptions that are made as a result of previous experience, a role that falls upon the leader as teacher and designer.

Adult learning theory can be viewed as based on adult characteristics, life-events, or changes in cognition (Merriam & Caffarella, 1991). Much of the research work has been conducted informally and is based to a large extent on anecdotes, experiential evidence or speculation (Merriam, 1987). "No theory fares well when all three criteria [practical application, understanding, and universality] are applied. Few [theories] have been empirically tested at all, and none is

supported by a substantial body of research” (p. 197). The lack of empirical research in the area of adult learning can be illustrated by the fact that Tough’s research in 1979 (cited in Garrison, 1991) is still cited as having established adults as self-directed learners. In spite of this there is nevertheless a plethora of opinion papers speculating on the nature of adult learning.

From this review, however, the following conclusions might be drawn: adults as learners have a wide range of experience which influences and from which they inform their learning activities; profound, transformative or deep learning happens as individuals critically reflect upon their learning and integrate new knowledge with previous experience, and learning activity is enhanced if the individuals can identify personal benefit from engaging in learning. In creating an environment conducive to learning, attention should be directed toward providing safety and a sense of community, providing learning oriented resources and skill development, and removing any potential barriers to learning.

Organizational Leadership

A review of leadership literature shows that there have been a variety of approaches taken in studying leadership, including viewing leadership as a collection of traits, as a repertoire of behaviours, and as a

process between leaders and followers (Northouse, 1997). As Makridakis (1996) notes, leadership theories are created, tested in the business arena and either modified or forgotten, depending on their validity and reliability. According to Makridakis few theories stand the test of time and duress in the field, due to their various inherent limitations.

However that may be, it is worth looking at the approaches that have been taken in the leadership field in order to cull ideas and practice of value to this study and to explore the linkages between leadership and educational theories. This section will look at the literature on leadership in business organizations in general, and then investigate areas that have the learning of followers as a significant leadership orientation.

Many researchers have proposed theories for effective leadership. Popular literature on the subject crowds bookstore shelves, and the plethora of changes in leadership style or approach can be evidenced in the cynicism of the workforce who treat every change as a “flavour of the month”. Hersey and Blanchard (1993) provide a table of significant milestones in the development of motivation and leadership that includes twenty-eight significant contributions since 1911 from the fields of Psychology and Business Management (p. 95). Makridakis (1996) quotes 44 “major management theories” that he has encountered since 1965 along with their inherent problems or unrealistic assumptions. An examination of these analyses shows the difficulty in theorizing about a

construct that is as complex as leadership, given the vast range of situations and personalities in which it manifests.

Leading is only one of the roles, albeit important, performed by managers, but the first question in exploring leadership must be, what does one mean by the term leadership? Leadership has been defined in a number of different ways. The following definitions have salience in this study: "Leadership is the activity of influencing people to strive willingly for group objectives" (Terry (1960), as cited in Hersey & Blanchard, 1993, p. 93), and "[Leadership is] the process of influencing people toward accomplishing [the organization's] goals. (Koontz & O'Donnell (1984), as cited in Hersey & Blanchard, 1993, p. 94). DePree (1989) defines leadership as "an art, something to be learned over time, not simply by reading books. Leadership is more tribal than scientific, more a weaving of relationships than an amassing of information" (p. 3).

In organizations, elements inherent to the leadership role can impact how that role is carried out. For example, in organizations leaders are appointed, not chosen by followers. The leader is given a mandate by his or her superiors which they are expected to execute, resulting in goals that are imposed on the group. The imposition can be "nice" or "not nice", effective or ineffective, agreed to or contested. Within these and other variables the leader must facilitate the achievement of the goals of the organization. This means the work group must have the most

performance- and learning-nurturing environment possible, whatever the internal organizational or external economic or political climate.

Leadership can also be viewed as a set of measurements along a series of continuums that indicate varying aspects of leadership. For example, different leaders would vary along measures of degree of control exercised, amount of communication undertaken, amount of one-way or two-way communication, degree of relationship-building activities, degree of goal-setting and performance management. Of salience here is the idea that leadership is a complex interplay of many different variables among which some may facilitate and others hinder learning in workers.

An important distinction must be made between management and leadership. Kotter (1990), and Bennis and Nanus (1985) both differentiate between management and leadership. Both agree that leadership is generative and exploratory, whereas management concerns itself primarily with arranging work, time and resources in an efficient manner. The difference might be illustrated as that between an architect and a building manager. Architects concern themselves with ideas and principles in order to create a living space. Building managers concentrate on what needs to be done to make existing space efficient for its occupants. Architects look at the interplay of space, light and form. Building managers look at the interplay of schedules, usage and operational concerns. It is thus apparent that leadership and

management are very different things though both are necessary to run an organization effectively. Within the confines of this paper, leadership will be the primary focus of exploration.

The physics-based concept of field theory is a useful one from which to view leadership. Wheatley (1994) applies field theory to organizations. "Fields are unseen structures, occupying space and becoming known to us through their effects" (p. 49). "Fields encourage us to think of a universe that more closely resembles an ocean, filled with interpenetrating influences and invisible structures that connect" (p. 51). She identifies vision, culture and values as fields within organizations, often created by leaders but sustained and encountered by every employee, usually through the medium of communication. This concept is also explored by Roberts, Ross and Smith (1994), who define a field as "an unseen pattern of structure that is nonetheless real enough to influence behaviour. We know about these fields - as we know about gravitational, electromagnetic, and quantum fields, not because we experience them directly, but because we see their effects. Developing a field that encourages learning is the primary task of leadership, and perhaps the only way that a leader can genuinely influence or inspire others" (p. 65). If one stretches the concept of field theory a little further, fields are seen to be created by each leader and worker in their respective areas of influence. The organization as a whole creates its own field, and

the interaction between all of these manifest as behaviours, relationships, policies, events or physical environments, depending on the timing and context of the interaction and the participants involved. Leadership in this scenario becomes the interface at which a myriad of fields intermingle, featuring at any one time the principle players of leader and follower, but informed by each and every other field participating in any particular manifestation or effect of this interface. A field then becomes an expression of personal or collective energy occupying space and time, and becomes visible only through its interaction with other fields. When the field is not interacting, it is not visible and from a research perspective may get overlooked or be assumed without being articulated. For example, in theorizing around leadership, cultural and contextual fields permeate human interaction but are often not acknowledged for their impact on leadership.

It is not the intent of this study to explore whether leaders are “born or made”. Leadership is a component deemed necessary within business organizations to achieve their goals. However they come to be, it is the contention of this study that leaders need to exhibit certain behaviours, demonstrate skills and engage in relationships in order to achieve organizational goals, in particular the goal of continuous learning. A leader thus is *one who is responsible from an organizational perspective for the performance of a group of people who report directly to*

her or him, and for the achieving of organizational goals through the group's performance. Acknowledging the implicit assumption within this framework that learning automatically leads to improved performance, this study explores which of a leader's behaviours, skills and relationship parameters might impact their workgroup's ability to learn. Moreover, leadership will be examined terms of the *effective execution of the roles of teacher, designer, and steward.*

Looking at the literature in the leadership area, it is seen that various leadership theories focus on various fields. Some focus on leaders and their characteristics, skills and behaviours. Some focus on followers' needs or organizational goals or contextual factors. Still others look at the interactions between specific fields: leader-follower (relationship), leader-context (contingency and situation), leader-follower-context (process-based). The latter may be referred to as multiple-field theories. From a learning perspective, each organizational field may have an impact on learning in the workplace. In fact, some non-organizational fields also come into play, among which might be included those of societal expectations, personal histories and meta-stories such as "success", "the good life", or "the American Dream". The following section will introduce Senge's framework of leadership, will place leadership theory within a field-based framework in relation to Senge's proposal, and explore its relevance to learning in the workplace.

Senge identifies three major roles for leaders in facilitating learning in organizations, namely designer, steward, and teacher. As designers, leaders build into organizational structure the antecedents for effective learning, whether those are policies, work processes or communication channels. A critical skill for leaders as designers is to see how different structural factors and processes fit together to enhance or hinder learning. As stewards, leaders must “naturally see their organization as a vehicle for bringing learning and change into society” (1990a, p. 346). They must have a personal vision or “purpose story” that supports and embodies the organizational vision. This connection allows the leader to broaden the purpose of his or her work to encompass humanity’s progression or evolution through learning. In implementing this broader vision, a leader becomes the steward of that vision. As teachers, leaders are responsible for “defining reality... leaders can influence people to view reality at four distinct levels: events, patterns of behaviour, systemic structures, and a purpose story” (1990a, p. 353). Defining reality at the level of individual events leads to a reactive environment. Identifying patterns of behaviour, the second level of reality, helps to focus toward longer-term trends and their implications. In learning organizations, leaders focus their efforts the latter two levels of reality: the systemic structures which generate the observed events, and the purpose story, or

vision. “Much of the leverage leaders can actually exert lies in helping people achieve more accurate, more insightful, and more empowering views of reality” (1990a, p. 353). There have not been any empirical studies from a follower perspective of leader behaviour relating to these roles.

Within the leader field, various theories have been proposed that prescribe a certain set of characteristics that leaders need to espouse, for example charismatic leadership (Bryman, 1992; Conger & Kanungo, 1998), principle-centred leadership (Covey, 1992), or transformational leadership (Burns, 1995). Yet other theories rely on skill-sets (Kiechell, 1994; Denison, Hooijberg & Quinn, 1995; Cornett, 1998; Hiltrop, 1998) or situational contexts (Blake & Mouton 1965, as cited in Goodnow, 1982; Hersey & Blanchard, 1993). These theories focus primarily on who a leader is or is not, what they can do or what they know, or how they behave. Few of these theories have a direct learning orientation, though many mention the need for *leaders* to be effective learners. Often, because the focus is on the leader, the learning of followers is not mentioned at all.

Early studies in leadership began by attempting to define the “great man” through assessing personalities of leaders. The theory of charismatic leadership builds from a belief that a set of characteristics,

the most important of which is charisma, combine to create successful leaders. "Charismatic leaders are thought to possess superhuman qualities or powers of divine origin which set them apart from ordinary mortals" (Hughes et al., 1999, p. 288). These people are leaders due to inborn qualities including vision, rhetorical ability, the ability to build trust with and among their followers, and positive use of emotional expression to build individual relationships with followers. It may be inferred that followers in this theory have a compelling vision within which to work and that they feel trusted. It is unclear however whether the charismatic leader will make available the necessary resources and day-to-day support that helps to create a learning environment.

Another approach to studying leadership was through the assessment of leader behaviours. These theorists included Lewin (1939, as cited in Chemers, 1995), who defined autocratic, democratic and laissez-faire styles of leadership, and Stodgill and Coons (1957, as cited in Chemers, 1995), who developed the Leader Behaviour Description Questionnaire (LBDQ). The LBDQ identified two broad leadership factors, namely Consideration Behaviour and Initiation of Structure. While this was an important advancement of knowledge, research attempting to identify how these behaviours related to organizational outcomes was inconclusive (Chemers, 1995).

Fiedler and Chemers (1984, as cited in Schermerhorn, Hunt & Osborn, 1998) developed a model of the interaction between leaders and followers based on earlier work around two leader orientations, relationship- and task-orientation, using the “Least-Preferred Coworker (LPC) scale. The contingency model of “situational control” evolved out of this work and included measurements of leader-member relations, task structure and position power. Thus this theory proposes that in certain situations task-motivated leaders would perform better than relationship-motivated leaders, and vice-versa. Interestingly this theory treated leadership as a trait, not a skill, and assumed that the leaders themselves would need to be moved to appropriate situations, rather than suggesting that they might learn how to behave in differing scenarios.

A skills-based model of leadership is posited by Hughes et al. (1999) which includes learning from experience, communication, listening, assertiveness, providing constructive feedback, goal setting, stress management, effective relationship building, punishment, delegating, meeting skills, negotiation, managing conflict, problem solving, team building, coaching, credibility and empowerment. Hiltrop (1998) also suggests that managers require skills in six main areas, namely visioning and planning, information handling, influencing and negotiating, creativity and learning, teamworking [sic] and leadership,

and change management. Another competency model developed by Kiechell (1994) recommends that leaders (managers) be proficient in four key areas: being an expert, being a networker, being self-reliant, and being resilient. Cornett (1998) conducted a study in which she identified the skills or characteristics of leaders in learning organizations.

Significant skills included the ability to see a purpose and vision, to communicate effectively and be open to new ideas, a tolerance for ambiguity along with the ability to act in its presence, and a developmental focus. "Leaders have excellent communication skills and understand the value of communication and dialogue in relationships and learning. Leaders are able to learn and want to learn. They believe their role is to develop both themselves and others" (p. 40). Most leader-oriented theories imply that leadership is a construct contained within the individual leader. Leadership might be inherent or learned, but resides with the leader. The leader acts in turn upon their environment and influences followers in an effective or ineffective manner.

As can be seen from the brief overview above, leader-field theories are diverse and inconclusive: if one were to compile a comprehensive list of "characteristic leader behaviours (or traits)" it might conceivably include most of the range of reasonably constructive human interaction. Nevertheless, as Kirkpatrick and Locke (1995) observe, "...it is unequivocally clear that *leaders are not like other people*" (p. 143). While

leader characteristics have and will continue to pique the interest of countless researchers and philosophers over the ages, it appears that the leader prototype is a difficult “bird” to capture or tame, though it seems they are easily identified by any observer.

Few theories of leadership focus on the followers - perhaps intentionally so, since they are aimed at leadership, not followership. However that may be, some theories do emphasize follower needs and development as an important, if not the only, focus of leadership. Burns (1995) developed a model of “transforming leadership” in 1978 that served a humanistic, developmental goal: that of creating the opportunity for workers to grow as human beings in a social, moral and spiritual manner. Burns compares this long-term transforming leadership with what he called “transactional” leadership, in which the leader contracts with the worker to deliver certain products or services. In contrast, transforming leadership “occurs when one or more persons engage with others in such a way that leaders and followers raise one another to higher levels of motivation and morality...Their purposes, which might have started out as separate but related...become fused” (Burns, 1995, p. 100). In Burns’ model, the leader as well as the followers may be transformed. It is important to note however that this is not a follower-

oriented theory. It still focuses in a prescriptive manner on leaders' behaviours.

Bass (1985, as cited in Couto, 1995) made a slight change in terminology from transforming to transformational leadership, and suggested that in transformational leadership only the followers are transformed. This view is less exalted than Burn's view of leadership since it does not extend to social change (Couto, 1995). In reviewing both Burns' and Bass's contributions, Couto attributes their differences to the organizations that they were studying: formal institutions versus socio-political organizations.

Another theory of note is the Path-Goal theory developed by House (1971, as cited in Chemers, 1995). Path-Goal theory attempts to address the effect of leader behaviour on subordinates based on the type of task the subordinate is trying to accomplish. This theory becomes significant because it actually addresses the varying needs of followers in the work context. Leader behaviours are classified as directive or participative which relate to the teacher role for leaders in Senge's model, supportive which relates to the designer role, and achievement oriented, which relates to the steward role.

The theory that leaders should choose particular behaviours based on differing situations was suggested by Hersey and Blanchard (1993) in their Situational Leadership Theory. They advise that leaders should

maintain a balance between accomplishing tasks versus attending to the relationship between the leader and the followers, and that this balance should be dependent on the maturity level of the followers and the nature of the task. Leader behaviours include delegating, participating, selling, and telling. As a worker evolves toward maturity, the leader in turn progresses from delegation through to telling, selling, or participating.

Leader-member Exchange (LMX) theory (Dansereau, Graen & Haga, 1975, as cited in Northouse, 1997) focuses on the relationship between the leader and their followers. In this theory, leaders behave differently toward their followers depending on whether the followers are part of the “in-group” or the “out-group”. This theory provides an interesting insight into leader-follower dynamics, and suggests that from a learning perspective, members of the in-group might receive greater access to resources and learning activities than those in the out-group.

Comprehensive, multiple-field theories of leadership that address a combination of leader characteristics and behaviours, follower characteristics and the relationship between the two have more recently begun to emerge. Covey (1992) proposed principle-centred leadership as a theory that combines acts of modeling, path-finding, empowering and aligning. Each of these acts interface across leader, follower and

organizational fields to create a work experience that follows “principles”, defined as universal rules of human interaction. In this model, the goal of leadership is to create an environment that builds individual agency within the framework of the organizational vision. It seems reasonable to assume that workers who feel compelled by their own as well as the organizational vision would be more likely to engage freely in learning activities for the benefit of the organization, however this is not explicitly mentioned.

A more recent paradigm of leadership that required active involvement in organizational affairs and concern for organizational success from every person in the organization has been posited by Block (1996). Individual involvement in organizational affairs is linked to broader societal issues such as democracy and personal agency. He called this participation “stewardship”. Similarly, Wheatley (1994) advocates a fundamental rearrangement of our understanding of leadership based on interconnections between the organization and society. In particular, she links new principles in science to leadership, namely those of chaos theory, field theory, and self-organizing structures

“I believe in my bones that the movement toward [participative management] is rooted, perhaps subconsciously for now, in our changing perceptions of the organizing principles of the universe. This may sound grandiose, but the quantum realm speaks emphatically to the role of participation, even to its impact on creating reality. As physicists describe this participatory universe,

how can we fail to share in it and embrace it in our management practices?" (p. 143).

Denison, Hooijberg and Quinn (1995) propose a multiple-field theory from within a framework of behavioural complexity. They argue that cognitive, behavioural and emotional complexity characterize the field of leadership, and that "the hypothesis of behavioral complexity implies that the behavioral portfolios of effective leaders should display a higher dimensionality than those of less effective leaders. Similar hypotheses could be generated with respect to cognitive and emotional complexity" (p. 537). Their study identified eight behavioural roles that leaders play, namely innovator, broker, producer, director, coordinator, facilitator, monitor and mentor, based on the work of Quinn (1988, as cited in Denison et al., 1995). These roles are bounded by a matrix of internal/external focus and flexibility/stability. This theory, while comprehensive, is purely behavioural and does not incorporate, as the authors suggest, the cognitive or emotional components of leadership.

Further development of this theory by Hooijberg, Hunt and Dodge (1997) resulted in the creation of the "Leaderplex model", which incorporated cognitive, social (rather than emotional) and behavioural complexity. Their model shows cognitive and social influences on a leader's behavioural repertoire and they propose that "the more leadership roles leaders can perform, the more likely it is that they will

function effectively” (p. 376). Carrying this proposition to exploring learning in the workplace, it would seem that leaders need to be aware of the impact of all three inter-relating factors, namely cognitive, social/emotional, and behavioural, on their followers’ learning. From this review it can be seen that leadership and its implied counter-ego, followership, is a complex phenomenon that is socially constructed, situated and co-created through interactions between leaders and followers.

Measuring such a complex phenomenon poses difficulties in that by adopting a deconstructivist paradigm and attempting to isolate three roles out of a potentially vast array necessarily ignores the other factors in the leadership equation, such as those mentioned above. However that may be, when viewed from a well-deliberated vantage point, a portion of the leadership landscape can be captured in hue, form and texture. Applying Senge’s roles to frame this study will create a perspective on leader-follower dynamics and workplace learning that has not yet been attempted.

CHAPTER THREE: METHOD

This research project uses a combination of survey method and a case study research design (Yin, 1989; Fowler, 1993, Whitfield & Strauss, 1998). The case study approach was used because it “is particularly well suited to researching motives, power relations, or processes that involve understanding complex social interactions [and when] the distinction between a phenomenon and its context is unclear” (Kitay & Callus, 1998, p. 104). A self-administered survey was chosen (Fowler, 1993; Whitfield & Strauss, 1998; Neuman, 1997) due to the following considerations. First, the researcher is an employee of the corporation. Other methods such as focus groups or interviews, if conducted by the researcher, may not have generated unbiased data due to the interaction and possible relationship of the researcher and potential respondents. While respondents were chosen randomly, many of them are personally known to the researcher. Prolonged interaction between the researcher and respondents, as happens within focus groups or interviews, may have compromised either their honesty, perceived safety or willingness to participate. The self-administered survey method mitigated these potential biases.

Second, the researcher's own viewpoint and personal experiences of learning in this organization may have unintentionally influenced the data collected in focus groups or interviews. Providing external facilitation was not an option due to resource constraints. Any potential bias due to the researcher's own viewpoint was mitigated by asking 18 raters from a Master's class in Workplace Learning at the University of Calgary to categorize the statements chosen by placing them in one of the seven constructs. These categorizations were then used to define boundaries between the constructs and to clarify wording. Also, during a pre-test pilot survey, 50 respondents were asked to comment on the syntax and presentation of the statements as well as the survey instrument in general. These comments were used to examine and modify the instrument to remove language biases or assumptions the researcher might have made about learning in this workplace.

Third, the anonymity and confidentiality of the participants would have been more difficult to maintain, since by definition in focus groups one sees the other participants. Fourth, the researcher wanted to access a large portion (up to 50%) of the Calgary employee population to ensure data integrity and adequate sample size. Time constraints prevented scheduling interviews or focus groups with such a large number of people. Fifth, the data generated by more qualitative means are more complex and thus more time-consuming and difficult to interpret. The

survey method chosen allowed for more structured data but still provided for free-form comments at the end of the questionnaire. For this research project, it was deemed sufficient that a closed-question self-administered survey would provide sufficient data to test the presence of Senge's roles and indicate which leader behaviours facilitated learning for the followers.

Research objectives comprised the following: first, to test for the presence of Senge's roles in a Canadian mid-size oil and gas exploration and production company, second, to assess whether followers' perceptions of leader behaviour change significantly over their duration of employment, respondent gender, educational level or supervisor gender, and third, to explore factors which potentially mediate learning in this workplace from a follower perspective.

The case study site, PanCanadian Petroleum Limited ("PanCanadian"), employed 2500 people at the time of the research project. Headquartered in Calgary, Alberta Canada, its operations comprise the exploration, production and marketing of crude oil, natural gas and natural gas liquids. Most of its business is conducted in Canada and the United States, however over the past five years the corporation has adopted an aggressive expansion policy to participate in international ventures. In 1999, its interests included ventures in the Gulf of Mexico, the North Sea, Australia, Venezuela and Africa.

PanCanadian was a convenient site in which to conduct this study because the researcher is employed by the company. In addition, PanCanadian espouses a learning organization philosophy, which made assessment of Senge's leadership roles in this workplace particularly appropriate.

Followers comprised the selected sample for the research rather than leaders to mitigate any potential bias that might be created by leaders self-reporting their behaviours. Samples for both the pilot and final survey were chosen using a random number generator (Microsoft Excel spreadsheeting function) which was matched to row numbers of an alphabetically sorted list of all full-time employees in the Calgary head office. Every person was instructed to provide their responses based on their experiences of their supervisor. As a result, the hierarchical position of the respondent became immaterial, since every employee has a supervisor with the sole exception of the President and Chief Executive Officer, who was not included in the study. For those employees with more than one supervisor, respondents were instructed to bear only one of their supervisors in mind as they filled in the questionnaire, to avoid garbled data. Those employees participating in the pilot survey were not included in the selection of participants for the final survey.

Respondents were assured of both anonymity and confidentiality. While the researcher was aware of the names of the employees that had

been selected to participate, the subsequent responses were not anonymous and were not identified with any particular employee. Any reference to employee names were removed from the questionnaires and each was given a numerical identifier prior to data entry. As data entry was done using a batching approach (greater than 10 at a time), the likelihood that a name or number would be retained in the researcher's memory was reduced to nil (the reader is assured this researcher does not have a photographic memory). To prevent accidental access to data by other employees at the work site all respondents were requested to convey their responses in a sealed envelope to a remote site at the University of Calgary. Data were compiled away from the work site and all responses were similarly stored in a secure location offsite. Some respondents utilized inter-office mail to convey their responses to the researcher. In this instance the researcher placed the responses in a secure drawer and conveyed them that same evening to the remote site.

The survey statements were developed using core ideas from Thompson (1995), Brown (1995), Pedler, Burgoyne, and Boydell (1991), and Senge (1990b). Each of the three leader roles were defined by descriptive questions representing themes or constructs (see Table 1), which were then further specified using behavioural statements (see Appendix A: Statements used in Survey).

Both positive and negative statements were framed to test each of the constructs and to minimize response biases. Respondents were not advised whether statements referred a particular construct or role, nor were the names of the constructs or roles explained. The statement order for the questionnaire was scrambled using a random number generator and the vehicle of measurement was a five-point Likert scale indicating level of agreement for each of the final fifty-two statements.

Leader as Teacher

Behavioural statements for the teacher role relied on four constructs: Reality, Modeling, Nurturing and Systems Thinking. The first construct, Reality, emphasizes the importance of awareness of one's mental models and the ability to challenge them. The leader's role in this construct is to assist workers in identifying their own assumptions in order to arrive at an accurate assessment of current state, after which it might be possible to evaluate alternatives.

Table 1: Roles and Constructs used in Survey Instrument

Role	Constructs
Teacher:	Reality Modeling Nurturing Systems
Designer:	Policy Resources
Steward:	Vision

“Learners do not always dig deep below the surface for underlying values and beliefs that govern their initial understanding of the situation but, when they do, learning can include a transformation of the basic mental models by which they view the world” (Watkins & Marsick, 1992, p. 294). If an accurate view of reality is not achieved, decisions are made from an erroneous or inappropriate perspective. This critical ability is echoed in other adult learning literature “...perhaps the most fundamental role of a teacher is to encourage and develop critical thinking. This is true not only because...critical thinking is a central component of adult education, but also because it is the one function that learners find most difficult to perform themselves” (Garrison, 1991, p. 299). Brookfield (1987) also comments on the danger of applying existing frameworks to accurately understand reality:

Attempting to understand our frameworks of understanding by using those very frameworks is highly problematic. It is like trying to step outside of our physical body so that we can see how a new coat or dress looks from behind....We hold up our behaviour for scrutiny by others, and in their interpretation of our actions we are given a reflection, a mirroring of our own actions from an unfamiliar psychological vantage point. This is how critical helpers function; they are mirrors who help us interpret and question our ideas and actions from a new viewpoint" (p. 29).

Survey statements included whether leaders encouraged followers to gather information about their own behaviours, whether leaders provided feedback themselves, whether leaders challenged assumptions and asked for solutions differing from the customary framework.

The second construct, Modeling, captured whether leaders showed their commitment to learning through their own actions relating to themselves; that is, whether they led by example. "The most important role of the teacher is to model critical thinking. That is, the teacher must be willing and prepared to subject his or her own values, beliefs and ideas to critical analysis...Role modelling of critical thinking is risky and therefore requires courage and imagination" (Garrison, 1991, p. 300). Statements focussed on whether the leader showed the importance of learning by engaging in it for their own benefit, whether they encouraged, valued and solicited challenges to their own thinking from followers, whether they refrained from dysfunctional behaviour such as blaming

and retaliation when challenged by followers, and whether the followers felt their supervisors listened to their point of view.

As important as role modeling is, it is also critical to actively nurture learning in others. The third construct, Nurturing, explored how leaders treated their *followers'* learning activities. Behavioural statements included creating a safe environment, provision of opportunity to practice and experiment, sharing and encouraging followers to share information, leader responses to mistakes made by followers, and leader responses to followers taking time to reflect at work.

The final construct in the Teacher role was Systems View, which examined the leader's ability to make connections between seemingly disparate events, to identify patterns, and to encourage their followers to do so. Statements asked whether followers felt they were encouraged to see connections between their work and that of others in the company, whether their supervisor looked for patterns across events and time, whether followers were encouraged to reframe their thoughts from others' perspectives, and whether they were encouraged to connect with others outside their own area of expertise.

Leader as Designer

The Designer role exemplified the architectural nature of leadership, and had two constructs, Policy and Resource Provision.

Policy referred to the formal and informal work practices that were implemented by the leader, and examined whether these supported or hindered learning. Statements included whether learning activities were considered part of job performance either informally or formally, whether the followers had learning plans, whether the established procedures or work practices were easy to challenge or change, whether it was a norm in their work group to take time to think, whether followers felt responsible for their own learning, and whether the followers felt rewarded for engaging in learning activities.

An obvious sign of commitment to learning in an organization is the provision of resources devoted to making it happen. The second construct in the Designer role, was Resource Provision to examine whether resources had been offered or provided, and included statements referring to provision of time, information or finances to engage in learning activities, documenting learning in order to share them with others, and whether followers had received training in how to dialogue.

Leader as Steward

This was the most difficult construct to develop or quantify, since it referred to a leader's philosophical outlook rather than any concrete behaviours that a follower might observe. However, it was apparent that

followers would be aware of the presence or absence of a vision around learning and leader actions associated with such a vision. Survey statements described leader behaviour by asking whether the leader had articulated a vision that included learning, whether they supported that vision in the face of political or economic adversity, and whether they encouraged the development of personal vision in their followers.

Six of the statements assessed perceived success of supervisor in creating a learning environment, including affective, qualitative and quantitative influences on followers' learning. Other questions nested within the constructs discussed above tested for adult learning principles such as the presence of time to reflect, the provision of forums to create learning communities, rewarding learning activities, encouragement of critical thinking and provision of opportunities to practice. General comments were solicited at the end of the questionnaire (see Appendices B and C).

The Survey

A pilot survey was conducted with fifty of 937 Calgary-based full-time employees. Twenty-five females and twenty-five males were randomly selected to participate using a random number generator, and were given six working days to respond. Surveys were issued on May 6, 1999, a written reminder was distributed on May 12, 1999 and the

response deadline was May 14, 1999. Late responses were accepted for one additional week due to mail delivery delay. The response rate was 68 per cent of the 50 employees sampled. Based on the results from the pilot survey, changes were made to the research instrument. Statements were added to capture qualitative, quantitative and affective impact of supervisor behaviours. All statements were edited to eliminate any lingering language biases such as potentially leading statements, culturally sensitive wordings, words with negative or positive connotations, and any potentially gendered words. Editing also removed statements that might apply to more than one construct. The constructs themselves were amalgamated in instances where there was too much overlap in descriptive statements. For example in Designer, two constructs referring to Policy and Job Design were amalgamated into a single construct, Policy. An additional statistic was captured, namely the gender of the leader.

The final survey was administered to 390 full-time employees selected at random from the corporate headquarter site, excluding those that had participated in the pilot. Employees were given two weeks (10 workdays) to respond. Surveys were issued on July 6, 1999 and the response deadline was July 23, 1999. Late responses were accepted for one additional week due to mail delivery delay. The response rate was 49 per cent.

CHAPTER FOUR: RESULTS

Results were compiled using Microsoft Excel, and were initially captured by respondent identifier with associated coded demographics and numerical codes for their degree of agreement. Results were tabulated for frequency of respondents that marked “strongly agree” and “agree” for each statement on the questionnaire. “Undecided”, “disagree” and “strongly disagree” were not analysed, since this study was interested in the *presence* of behaviours (indicated by agreement) rather than their absence, which would have manifested as “undecided”, “disagree” or “strongly disagree”. Negatively worded statement responses were “flipped” so that those respondents strongly agreeing with a negatively worded statement were represented as having strongly disagreed with its equivalent positive version. The frequencies for each statement were divided by the total number of respondents to arrive at percentages representing “those that agreed”. This method was repeated within respondent sub-groups, converting every frequency to a per cent equivalent, thus equating sample sizes and allowing for comparison across various sub-groups using an Analysis of Variance (Dometrius, 1992), which assumes equal sample sizes.

Percentaged levels of agreement for each statement, construct or role do not sum to 100 since each respondent could potentially agree

with all statements. Level of agreement is assumed to have been normally distributed and could vary from 0 to 100 per cent for each averaged statement. Results were analyzed for agreement with the three roles and seven constructs, and examined for significant differences within respondent sub-groups selected by duration of employment, education, gender and occupational group. The response rate was 49 per cent (see Table 2 and Table 3).

Table 2: The Response Rate, Gender and Education Profile of Respondents

Surveys distributed	390			
Responses received	195			
Response rate (%)	49			
<hr/>				
Gender Distribution	# Resp	% smpl	% popn	
Female	90	46	45	
Male	105	54	55	
Blank	0			
Total	195			
Disqualified (late, not included in Total above)	11			
<hr/>				
Education	Female	Male	All	%
High School	15	2	17	9
Certificate/Diploma	22	5	27	14
Technical School	12	12	24	12
Undergraduate Degree	32	52	84	43
Graduate Degree	9	34	43	22
Blank			0	

It is interesting to note the gender difference in educational attainment. Most of those marking "High School" were females, while the great majority of those marking "Undergraduate" or "Graduate" degree were male.

The implications might be that male High School graduates are not hired by PanCanadian for the jobs that require that level of education, and may point to gendered employment practices. Again, there is a gender difference in occupational group. All the assistants without exception were female, and the vast majority of supervisory positions were held by males.

Table 3: Respondents' Position in Company and Duration of Employment

Years with Company	Female	Male	All	% of Total
1-4	24	36	60	31
5-9	17	25	42	22
10-14	24	10	34	17
15-19	12	16	28	14
>=20	8	10	18	9
Blank				0
Less than one year	5	8	13	6

Occupational Group	Female	Male	All	%
Assistant	28	0	28	14
Professional	47	79	126	65
Supervisory	9	25	34	17
Technical	6	0	6	3
Blank			1	

The composite average of responses across all three constructs showed 62 per cent agreement that the three roles were manifest at PanCanadian (see Table 4).

The average level of agreement for individual roles showed agreement levels to be: Designer, 57%, Steward, 63% and Teacher, 67%.

Table 4: Survey Results Grouped by Role (% agreement)

	All	F	M
TEACHER			
Systemic Outlook (TS)	69	70	69
View of Reality (TA)	58	62	58
Nurturing Learning (TN)	68	67	68
Modeling (TM)	74	75	71
Average	67	68	66
DESIGNER			
Resource Provision (DR)	54	56	56
Policies (DP)	60	61	61
Average	57	58	58
STEWARD			
Vision (SV)	63	66	63
COMBINED			
	62		
n = (All = 195, F = 90, M = 105)			

Within the Designer role, the Resource construct (54%) measured whether respondents perceived that the supervisor provided resources to

engage in learning, whether information on learning opportunities was seen to be provided to the worker, whether the workers felt they were given time off work to learn, and whether the worker felt they had been trained in how to dialogue.

In particular, documenting learning (36%) and receiving training in dialoguing (26%) showed the lowest agreement levels. The Resource construct showed lower agreement levels than Policy (60%) which measured whether learning was perceived to be part of performance expectations, rewards and appraisals, whether workers had learning plans or development contracts with their supervisors, whether they felt they were encouraged to take time out of their work schedule to reflect, and whether the supervisor had created forums for learning to be shared. The Policy construct showed low agreement for allocating time to think at work (26%), rewards for engaging in learning (49%) and the presence of personal learning plans (52%). High agreement levels across both constructs related to resource provision for learning (87%), feeling expected to share learning as part of job performance (80%) and being expected to take individual responsibility for learning (93%).

The Steward role comprised a single construct, Vision. The averaged level of agreement with this construct was 63%. Within Steward the lowest agreement level was for “support for learning activities not related to the success of the workgroup within the company” (43%).

When asked whether their supervisors articulated their support for learning, “My supervisor says that learning is a high priority”, 71% of the respondents agreed.

The Teacher role contained four constructs: Reality, Modeling, Nurturing, and Systems. The Reality construct tested for leader behaviour around challenging assumptions and providing accurate feedback. For example, workers were asked whether they were “encouraged to gather feedback from customers and colleagues about my performance in order to challenge assumptions about myself”, and whether the “supervisor challenges the assumptions I make about myself”. While respondents felt encouraged to gather feedback from customers and colleagues in order to challenge their assumptions about themselves (70%), they showed less agreement that they were receiving these behaviours from their supervisors (challenging assumptions 49%, feedback 48%), a finding that contradicts worker perceptions of a related construct, Modeling.

Modeling statements referred to leader behaviour that demonstrated their own commitment as well as desirable learning behaviours such as understanding others’ perspectives, soliciting ideas from followers and soliciting challenges from followers. All statements showed agreement levels greater than 60%, with exception of “not retaliating when challenged by others” which showed 60% agreement.

The Nurturing construct tested for respondent perceptions of leader behaviours that actively supported and encouraged learning activity, such as creating a safe climate, encouraging experimentation and providing opportunities to practice new skills. The highest agreement levels were for supervisors encouraging the sharing of new ideas (87%) and not blaming others for mistakes (82%). The lowest agreement level was for opportunity to practice (34%) and feeling their supervisor was comfortable if the workers were “just sitting and thinking” at work (54%).

Systems referred to systems thinking, which is the ability to envision and identify connections between work processes and people, to see patterns developing across individual events and to identify underlying causes from superficial symptoms. The lowest agreement level was for identifying underlying patterns (38%), and the highest were identifying connections (82%) and generating creative solutions by leveraging connections (82%). Two-way ANOVAs were executed on various sub-groups of respondents. These sub-group results are discussed below. All analyses were conducted at an alpha level of 0.05.

Representation from both genders was comparable (males, 54%; females, 46%) to that found in the employee population (males, 55%; females, 45%). Responses across gender of respondents and supervisors

(females: males) were not significantly different (See Table 5 and Table 6), nor were responses grouped by educational attainment (see Table 7).

Table 5: Analysis by Respondent Gender

Agreement Levels							
	DP	DR	SV	TA	TM	TN	TS
F	0.61	0.56	0.66	0.62	0.75	0.67	0.70
M	0.61	0.56	0.63	0.58	0.71	0.68	0.69

Anova: Two-Factor Without Replication				
<i>Variance Within Groups:</i>				
<i>SUMMARY</i>	<i>Count</i>	<i>Sum of Scores</i>	<i>Average</i>	<i>Variance</i>
F	7	4.564	0.652	0.003
M	7	4.460	0.637	0.003
DP	2	1.218	0.609	0.000
DR	2	1.129	0.564	0.000
SV	2	1.286	0.642	0.000
TA	2	1.196	0.598	0.000
TM	2	1.460	0.729	0.000
TN	2	1.353	0.676	0.000
TS	2	1.382	0.691	0.000

<i>Variance Between Groups:</i>					
<i>Source of Variation</i>	<i>df</i>	<i>Mean Squares</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Gender	1	0.000	4.956	0.068	5.987
Constructs	6	0.006	43.187	0.000	4.284
Error	6	0.000			
Total df	13				

In effect, results showed that respondents, when grouped by gender or by educational attainment, had similar opinions of their

supervisor's behaviours, implying initially that leaders in this organization do not treat workers differently due to gender or educational attainment. Further analysis however, revealed gender differences when grouped by occupation. These will be illustrated and discussed presently.

Table 6: Analysis by Supervisor Gender

Agreement Levels							
	DP	DR	SV	TA	TM	TN	TS
F	0.63	0.60	0.68	0.64	0.69	0.66	0.69
M	0.60	0.54	0.60	0.56	0.77	0.69	0.69

Anova: Two-Factor Without Replication				
<i>Variance Within Groups</i>				
	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
F	7	4.586	0.655	0.001
M	7	4.453	0.636	0.006
DP	2	1.227	0.613	0.000
DR	2	1.136	0.568	0.001
SV	2	1.285	0.642	0.002
TA	2	1.196	0.598	0.003
TM	2	1.459	0.729	0.002
TN	2	1.352	0.676	0.000
TS	2	1.381	0.690	0.001

<i>Variance Between Groups</i>					
<i>Source of Variation</i>	<i>df</i>	<i>Mean Squares</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Gender	1	0.001	0.73	0.42	5.98
Constructs	6	0.006	3.75	0.06	4.28
Error	6	0.001			
Total df	13				

Table 7: Analysis by Education

Agreement Levels							
	DP	DR	SV	TA	TM	TN	TS
Certificate	0.62	0.57	0.66	0.64	0.79	0.71	0.67
Technical	0.62	0.53	0.61	0.60	0.66	0.64	0.72
High School	0.50	0.58	0.72	0.65	0.73	0.63	0.68
Under-Graduate	0.60	0.54	0.61	0.53	0.74	0.67	0.70
Graduate	0.59	0.53	0.61	0.59	0.76	0.71	0.67
Anova: Two-Factor Without Replication							
Variance Within Groups							
SUMMARY	Count		Sum	Average Variance			
C	7		4.662	0.666			
T	7		4.384	0.626			
H	7		4.486	0.641			
U	7		4.387	0.627			
G	7		4.475	0.639			
DP	5		2.932	0.586			
DR	5		2.753	0.551			
SV	5		3.206	0.641			
TA	5		3.004	0.601			
TM	5		3.686	0.737			
TN	5		3.360	0.672			
TS	5		3.452	0.690			
Variance Between Groups							
Source of Variation	df	Mean Squares	F	P-value	F crit		
Education	4	0.001	1.137	0.362	2.776		
Constructs	6	0.021	13.229	0.000	2.508		
Error	24	0.001					
Total df	34						

Across occupational groups, the Assistant (A), Professional (P) and Supervisory (S) groups were found to be significantly different (see Table 8).

Table 8: Analysis by Occupation

Agreement Levels							
Occupation	DP	DR	SV	TA	TM	TN	TS
Assistant	0.51	0.50	0.62	0.56	0.71	0.59	0.60
Professional	0.60	0.56	0.62	0.56	0.74	0.69	0.69
Supervisor	0.61	0.51	0.64	0.59	0.78	0.70	0.75

Anova: Two-Factor Without Replication					
Variance Within Groups					
SUMMARY	Count	Sum	Average	Variance	
A	7	4.093	0.585	0.005	
P	7	4.464	0.638	0.005	
S	7	4.571	0.653	0.009	
DP	3	1.729	0.576	0.003	
DR	3	1.567	0.522	0.001	
SV	3	1.874	0.625	0.000	
TA	3	1.714	0.571	0.000	
TM	3	2.224	0.741	0.001	
TN	3	1.980	0.660	0.004	
TS	3	2.039	0.680	0.006	
Variance Between Groups					
Source of Variation	df	Mean Squares	F	P-value	F crit
Occupation	2	0.008	9.447	0.003	3.885
Constructs	6	0.016	17.66	0.000	2.996
Error	12	0.000			
Total df	20				

Interestingly, all of the “Assistant” category were female, and an ANOVA on constructs by gender within occupational groups also found

significant differences. However these were most likely due to the occupational group itself, rather than due to gender. Further analysis verified significant differences across the “professional” group (see Table 9 and Table 10). In other words, professional females and males had significantly different experiences of leader behaviours, though “all females” and “all males” did not.

Likewise, Assistants had different experiences than Professionals. This contradicts the earlier finding that neither gender nor education were determinants of difference in responses - since most Assistants were female and High School graduates, and most Supervisors were male and held Undergraduate or Graduate degrees, by definition, there is a gender and educational difference in responses, though it is hidden when grouped by “all females” or “all University Graduates”. A two-tailed t-test comparing supervisory males and females however ($p(T \leq t) = 0.13$, $df = 12$) did not show significant differences, implying that at a supervisory level, responses did not differ by gender.

The “less than one year” responses ($n = 13$) were not analyzed since many of them noted in the comments that they had not been at the company long enough to be very sure of their opinions and hence their responses may have been inaccurate.

Table 9: Analysis of Occupation grouped by gender

Agreement Levels								
Occupation/ Gender	n	DP	DR	SV	TA	TM	TN	TS
Prof. females	47	0.65	0.59	0.66	0.61	0.76	0.71	0.70
Prof. males	79	0.58	0.54	0.59	0.53	0.73	0.68	0.69
Sup. females	9	0.64	0.56	0.71	0.69	0.81	0.72	0.89
Sup. males	25	0.60	0.50	0.61	0.55	0.76	0.69	0.70
Assistants (females)	28	0.51	0.50	0.62	0.56	0.71	0.59	0.60
Technical	6	0.74	0.70	0.70	0.79	0.72	0.69	0.83

ANOVA Two-Factor Without Replication (excluding Technical)

<i>Variance within Groups</i>					
<i>SUMMARY</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>	
Pf	7	4.679	0.668	0.004	
Pm	7	4.336	0.619	0.006	
Sf	7	5.023	0.718	0.012	
Sm	7	4.408	0.630	0.009	
A	7	4.093	0.585	0.005	
DP	5	2.984	0.597	0.003	
DR	5	2.675	0.535	0.001	
SV	5	3.193	0.639	0.002	
TA	5	2.953	0.591	0.004	
TM	5	3.774	0.755	0.002	
TN	5	3.389	0.678	0.003	
TS	5	3.571	0.714	0.011	

<i>Variance Between Groups</i>					
<i>Source of Variation</i>	<i>df</i>	<i>Means Squares</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Rows	4	0.018	12.774	0.000	2.776
Columns	6	0.029	20.803	0.000	2.508
Error	24	0.001			
Total df	34				

Table 10: Analysis of Professional Females and Males

ANOVA Two-Factor Without Replication					
Variance Within Groups					
SUMMARY	Count	Sum	Average	Variance	
Pf	7	4.679	0.668	0.004	
Pm	7	4.336	0.619	0.006	
DP	2	1.225	0.613	0.003	
DR	2	1.124	0.562	0.001	
SV	2	1.252	0.626	0.002	
TA	2	1.147	0.573	0.003	
TM	2	1.488	0.744	0.001	
TN	2	1.392	0.696	0.000	
TS	2	1.386	0.693	0.000	
Variance Between Groups					
Source of Variation	df	Mean Squares	F	P-value	F crit
Gender	1	0.008	25.89	0.002	5.987
Constructs	6	0.009	28.87	0.000	4.284
Error	6	0.000			
Total	13				

Results across groups by duration (Table 11) showed a significant depression of agreement levels at the 15-19 year group, with a “rebound” effect after the 20 year mark. For example, agreement levels for Policy in the 15-19 group were 53%, and were 61% for 10-14 and 68% for >20 groups.

This meant that the 15-19 group had lower agreement levels than the other two groups, a finding that was consistent across all constructs. The ANOVA showed that this finding was not due to chance, and

sampling errors had been omitted by using a random sample. Therefore, some other explanation for these results must be devised.

Table 11: Analysis by Duration of Employment

Duration (years)	DP	DR	SV	TA	TM	TN	TS	n
1-4	0.59	0.60	0.64	0.57	0.76	0.68	0.70	60
5-9	0.61	0.53	0.64	0.63	0.73	0.69	0.70	42
10-14	0.61	0.50	0.61	0.60	0.76	0.70	0.67	34
15-19	0.53	0.46	0.53	0.47	0.66	0.58	0.59	28
>=20	0.68	0.56	0.70	0.68	0.82	0.79	0.86	18
Overall	0.60	0.54	0.63	0.58	0.74	0.68	0.69	190
ANOVA of respondents from 10 to > 20 years								
<i>Variance Within Groups</i>								
SUMMARY	Count		Sum		Average		Variance	
10-14	7		4.456		0.636		0.007	
15-19	7		3.817		0.545		0.004	
>=20	7		5.081		0.725		0.010	
DP	3		1.821		0.607		0.005	
DR	3		1.512		0.504		0.002	
SV	3		1.840		0.613		0.007	
TA	3		1.749		0.583		0.010	
TM	3		2.241		0.747		0.006	
TN	3		2.072		0.690		0.011	
TS	3		2.119		0.706		0.018	
<i>Variance Between Groups</i>								
Source of Variation	df		Mean Squares	F	P-value		F crit	
Duration	2		0.057	62.367	0.000		3.885	
Constructs	6		0.020	22.825	0.000		2.996	
Error	12		0.000					
Total df	20							

Qualitative Data

Comments were solicited at the end of the questionnaire. Analysis revealed a number of major themes including: length of time employed at the organization, change, culture, survey design, and gender and race (see Appendix C).

The first grouping, comments based on length of time employed, focussed on the “less than one year” group of employees, who remarked that their responses might be compromised because they had not been at PanCanadian long enough to provide what they thought was valid data “Please note I have got a lot of undecided simply because I have only been here 2 months. Don't know as of yet”. Several respondents felt that their responses were difficult to provide because of the degree of change in supervisors that they had recently experienced. “Please be advised I've only work[ed] for my current supervisor for 11 months. My answers would not have been so positive with my prior supervisor. Supervisors make a tremendous difference to my learning curve”. Another respondent commented: “In the 4 1/2 years I have been with the company this is the 4th supervisor I've had [and] the 6th organizational change including three changes in structure immediately above my supervisor. My personal development plan has been greatly impacted by these, one of which was due to economic environment. By impacted I mean ignored. ie what is best for company despite documented development plans”. Since

respondents were asked to refer to one particular supervisor while responding, these responses were included in the analysis. Some respondents made comments about the culture of the organization and how that impacted their learning. These included comments about sub-cultures within particular groups, the value placed on learning by individual supervisors, or respondent perceptions of corporate culture. One respondent commented "As learning new skills is one of my personal goals my supervisor only negatively impacts this activity slightly. A more open or positive individual would make it easier to learn. The last comment I heard was to look at appropriate courses but not too hard as it is a tight year financially at PCP. Stewarding intellectual capital?" Another comment referred to the value placed on learning. "Learning is still second to doing the work at hand. I don't believe many managers can value the thinking of a better method while the work piles up even if re-work is a major contributor to the load". Survey design issues were raised, from formatting/proof-reading to questioning the assumptions behind the survey. One respondent questioned the extent of the role that supervisors play in creating learning "The survey's approach gives me the impression that the assumption is that the supervisor creates the environment for learning vs. it being the individual's initiative to create it - a shared model vs. one or the other". This respondent appeared to be expressing their ownership of and initiative in driving the learning

process. One comment was received relating to each of gender and race: “Due to my position and overall perceived impact to the company, my GM’s lack of understanding of what I do and his lack of curiosity to find out - I find that I am on my own in terms of how I am evaluated and compensated. Learning is limited and frowned on if it is not computer related, whereas others of the same position spend substantial time on field training and trips that I have been told I am not to go on due to the lack of relevancy to my career development. I hate to say it but the apparent favoritism seems to be gender-related in this group”. and “My supervisor tends to beebop [sic] at picking favorites lately. You never know what kind of a day you’re going to have. Some are treated harder than others due to race. Basically some are allowed excuses and others not. The supervisor is intelligent and well-liked, but the work environment is very stressful lately”. A few respondents shared personal comments, which are not included here since they were revealing enough to jeopardize the identity of the respondent. Other comments are included but are not pertinent to this research. Comments relating to the individual supervisors were the most frequent, both from a negative and positive perspective. Many re-iterated items that the survey captured through descriptive statements, but again a theme throughout was the existence of sub-cultures that either promoted or dissuaded learning activities. An example of a negative comment: “My supervisor is very

insecure, rigid and preaching. He is always stating the obvious/ motherhood statements. He is not concerned if I have a learning experience at work or not. He is always highly critical and judgemental [sic] and does not tolerate experimentation and mistakes.” Conversely, positive comments were also received “My supervisor and PCP in general have always been supportive of my learning progress. I am provided opportunities to interact in areas that are new to me, and I have resources to tap into when I run into areas that I have problems in”.

CHAPTER FIVE: ANALYSIS AND DISCUSSION

In general, the results corroborate that the followers agree that each of the three roles that Senge recommends do manifest in this company. However, as with any complex human behaviour, it is premature to assert that these behaviours are either necessary or sufficient for learning to occur, though it might be possible that these behaviours do *facilitate* learning. This study did not measure the quality or quantity of learning that occurs in this workplace, though it did query whether the followers felt their supervisors' behaviours "helped them learn". High levels of agreement with this statement as well with the affective, qualitative and quantitative statements demonstrated followers' appreciation for facilitating behaviours, yet does not point conclusively to the necessity of such behaviours in order for learning to happen. The role of personal agency should not be underestimated in the leader-follower relationship: Workers who are determined to learn may self-select away from the influence of non-facilitative supervisors, or may continue to learn in spite of any negative actions on their supervisors' part. To further explore this framework would require that an alternative research design be devised, such as a quasi-experimental study with a "control" group of people whose supervisors did not exhibit these behaviours, and an "experimental" group whose supervisors do exhibit these behaviours,

with standardized "learning activities" for both groups. It would also be interesting to investigate environments that do not articulate or espouse learning philosophies such as Senge's, to assess leader behaviours in this area and their influence on learning compared to organizations such as this case study.

Reviewing the results from an adult learning theory perspective delineates the difficulties of applying theories to the workplace. For example, one proposition explored in the literature review was that adults as learners have a wide range of experiences which influence, and from which they inform their learning activities. This was examined through statements that questioned whether previous experiences were consciously utilized as learning catalysts and whether these were captured or articulated and shared. Respondents, when asked whether they took time from their work schedule to think about learnings from experiences indicated that they had little time in which to engage in such deliberate linking (25% agreement) and recording (36% agreement).

Another adult learning theory suggests that profound, transformative or deep learning happens as individuals critically reflect upon their learning and integrate new knowledge with previous experience. Statements referring to reflection contradicted each other: one statement intimating that "time be taken out of the work schedule to think about learning" received only 25% agreement, where another

statement referring to “feeling comfortable “just sitting and thinking”” received 54% agreement. It may be that the appearance of “not working” by engaging in thinking is unpopular in this organization’s culture, and that perhaps suggesting that time was taken “from the work schedule” to reflect may have biased responses. On the other hand, respondents showed stronger agreement that their supervisors supported their thinking activity which may reflect an overall burgeoning cultural change or another indication of sub-cultures.

Critical reflection occurs as existing thought patterns are identified and assumptions are challenged. In this study challenging assumptions to expose mental models showed 49% agreement (“I’m encouraged to gather feedback from customers and colleagues about my performance in order to challenge my assumptions about myself”, and “My supervisor challenges the assumptions I make about myself”), which indicates that over half of the respondents either did *not* agree or were uncertain whether their assumptions were challenged by their supervisor. If critical thinking is happening at all in this organization, for over half the people it is not occurring through challenging assumptions, at least from the supervisor, though it may occur through other avenues. Follower perceptions of leader activity in reframing showed 70% agreement and encouragement of critical comments showed 73% agreement which might seem to suggest that leaders are attempting to critically examine mental

models. However, respondents did not feel their assumptions about themselves were challenged by their supervisor (49% agreement), nor were they given frequent feedback on their performance (48% agreement). Respondents did not feel encouraged to document their learnings (36%) yet felt responsible for sharing them with others (80%). These findings reveal lost opportunities for the organization to leverage whatever learning is happening by articulating and disseminating it to other workers.

Adult learning theory also states that learning activity is enhanced if the individuals can identify personal benefit from engaging in learning. However in this case study, while a high proportion of respondents agreed with the statement “I am responsible for my learning” (93%), and that their supervisors also said that learning was a high priority (71%), almost half the respondents did not have a learning plan (52% agreement with “I have a personal development plan or learning contract with my supervisor”).

The differences in agreement levels across duration were interesting, and may be explained by the phases of “honeymoon”, “disillusionment” and “reconciliation” that are experienced in human relationships, if such a parallel could be drawn to a relationship between an employee and employer. It is possible that the 15-19 year employees were experiencing disillusionment with their supervisor and work

environment whereas the honeymooners (<15 years, though this may be a stretch for the length of time allocated to a honeymoon!) had not yet reached that disillusionment and the veterans (>= 20 years) had reconciled their differences. It may be that the 15-19 year employees need different kinds of support for learning than other employees. Alternatively, it might be that after 15 years of employment these employees had reached a plateau where they saw little opportunity for learning or advancement, and thus were more critical of their supervisors.

Another explanation for this data might be that the 15-19 employees are caught “between a rock and a hard place” in that they feel they are senior employees and “should know” how to learn and how to be self-directed, yet have spent most of their work lives in a milieu that discourages individual thought and agency. Also, supervisors of these “senior” employees may feel they “ought to know” about learning and therefore do not expend effort to support them. This would show in lower agreement levels for supervisor behaviour, which does in fact happen. Finally, employees in this group may more critical of their supervisors than other groups for reasons unknown to the researchers.

The finding that gender played a significant part in responses of sub-groups (based on occupation) was not surprising, considering the

substantive body of research on gender in organizations. The degree of the difference within females, however, was large (58% agreement for Assistants, 66% for Professionals and 71% for Supervisors). An interesting explanation for this might be found in the level of adaptation to a male-oriented environment required to succeed in a corporation such as PanCanadian. Wajcman (1998), for instance argues that senior women managers manage in much the same way as senior men, within similar contexts, because leadership styles are shaped by "organizational imperatives than by the sex or personal style of specific individuals" (p. 159). Therefore, it might be postulated that the women in higher positions had successfully adapted to the dominant male environment and PanCanadian's imperatives, were more comfortable with male norms and behaviour patterns, and so felt more agreement with the statements in the survey.

One could speculate that the female supervisors naturally had or had developed a more male perspective than the female professionals or assistants. If this were the case, their positive perceptions of supportive behaviour from their supervisors would be higher than those of the other groups, which is substantiated in the results.

It may also be that this corporation treats supervisors in general more favourably in learning activities than other staff hence the difference between the three occupational groups. This explanation

however is not supported by male supervisory agreement levels (63%) which were comparable to female (66%) or male (61%) professionals. Another explanation of the data might be that assistants experience fewer supportive learning behaviours from their supervisors, and find themselves in a “pink ghetto” with less opportunity to learn. It would be interesting to investigate further the behaviour patterns of leaders toward both the assistant group and the male professional group to explore the factors involved in their lower agreement levels relative to the other sub-groups.

A key point in Senge’s philosophy is the use of dialogue and the balance between inquiry and advocacy as a vehicle for learning. The low level of agreement relating to having received training in how to dialogue (25%) may indicate that this has either been overlooked as a learning tool, that respondents misunderstood the meaning of the word, or that they took the word “training” literally to mean a course, workshop or other formal session and responded negatively. It may have been more pertinent to ask whether the respondents could describe what dialogue was and relate a situation in which they had demonstrated its use.

It is also uncertain, due to the ambiguity of the concept of learning, whether respondents were referring to mere information acquisition or the deeper, transformative learning that both Senge and Mezirow recommend. Further discussions with focus groups within the

sample set or a different research methodology would be required to access this deeper level of conceptualization.

The contradictory findings emphasize the difficulty of extrapolating from theories to the workplace. As is apparent from the agreement levels in this survey, many of these workers did not feel they could take time to learn, to reflect or to journal. Respondents' comments also illustrated this dilemma: that while they think continuous learning is important, they do not feel they have time to actually deliberately do it at work. This finding casts doubt either on whether learning is happening at all in this case study, or on the body of theory itself.

The contradictions also seem to demonstrate a disconnect between espoused and actual attitudes and actions toward learning in this workplace. In both cases, supervisors seem to encourage learning activity yet it is not part of the cultural norm. In Senge's model this should show up as lower agreement for the Designer role, which in fact does occur. From these results it appears that infrastructure is not supportive and could be improved. Perhaps the high level of personal responsibility in this workforce reflects a low need for the kind of structural support surveyed in this research.

The low incidence of fundamental learning blocks such as reflection, critical thinking, dialogue, experimentation and reframing, suggests that transformative, generative learning is not happening in this

workplace. What this connotes is the lost opportunity of harvesting the learning and creativity of a workforce well-versed in the skills and thought patterns of generative paradigms.

In addition, merely learning for the sake of learning without being able to apply that learning to the benefit of the organization may be considered useless from the organization's standpoint, though it may not be so from the individual's. Concrete measures such as this survey miss the potency of latent knowledge that is resident in workers, but not utilized optimally by the organization.

Another concern with learning as a "blind" pursuit relates to the content of the learning - individuals may learn inappropriate behaviours as readily as constructive ones, and pass those behaviours on to others in the organization, resulting ultimately in the learning being a definite detriment to the organization rather than an asset (Tsang, 1997). As Miner & Mezias (1996) comment, "Although learning carries a positive connotation in many cultures, research on organizational learning clearly shows it may or may not produce good outcomes" (p. 93). Thus the moral, ethical or social implications of individual learning as it is inculcated into the organization should not be ignored in the current infatuation with learning in management circles.

CHAPTER SIX: CONCLUSION

Through assessing followers' perceptions, this study endeavoured to validate the presence of the leader roles of designer, steward and teacher, and to identify components of leader behaviour that contribute toward creating learning environments.

This attempt to delineate leader-follower dynamics surrounding learning in the workplace through the use of Senge's model has demonstrated the importance of measuring leadership effectiveness in facilitating learning from the *followers'* perspective. While leaders might profess to exhibit behaviour appropriate to facilitating learning, it is largely from the followers' perspective that the influence of this behaviour is felt, since they are the key executors of and participants in learning activity.

The cultural impact of a strong leadership commitment to learning however should not be underestimated. The high level of agreement with personal responsibility for learning (93%) in this sample may have arisen through *strong* leadership commitment, rather than the converse, that is to say that high individual responsibility is somehow compensating for *low* leadership commitment.

Key findings such as lower agreement levels for the Designer role show the importance of attending to work practices, infrastructure,

policy and resources in creating learning environments. Also, the differences in agreement levels across occupational groups point to the importance of making learning available and accessible to all functions within an organization, rather than only to those that might be politically or financially powerful, popular or socially valued. Differences in duration of employment groupings delineate the danger of organizations assuming that “veteran” employees are somehow more capable or committed than other groups, and therefore require less learning-focused activity from their supervisors.

Such data are valuable in the development of learning organization theory and its practice. Using a measurement such as the learning questionnaire developed for this study provides important input to the implementation of supportive leadership practices for learning in the workplace. A critical component that arose from the comments, but that was not readily apparent from the rest of the survey, was the existence of significant sub-cultures within PanCanadian, which altered the respondents’ perceptions of their learning. This points to the necessity of ensuring all leaders are not only aware of but are also actively and consistently supporting learning activities.

This study also points to gaps in our knowledge. Whether learning in organizations is inherently desirable, or whether *organizations* are

capable of learning, is not addressed in this research. As Fenwick (1998) notes, there are several assumptions made about “applying [individual learning] somewhat cavalierly to an organization. The organization is thus construed as a unitary, definable, intelligent entity. It is not, nor is it stable and bounded” (p. 144). Another implicit assumption is that workers will conveniently adapt to or endorse the organization’s agenda for learning. This study did question whether learning was supported in spite of economic or political adversity, and whether learning was supported even if it did *not* directly relate to the workgroups success (i.e. the organization’s agenda). The overall agreement level for the economic/political statement was 67%, but only 46% for the workgroup success statement. Obviously workgroup success is a well-understood agenda in this case study. Implicit in this agenda are the power relationships and possible exploitation involved in imposing any learning mandate on workers. “The meanings, dilemmas, insights and changes comprising people’s daily experience are neither acknowledged or valued...Marsick and Watkins (1990) go so far as to describe as “dysfunctional” a person’s ongoing incidental learning that does not advance the organization’s purposes.” (Fenwick, 1998, p. 144).

This research also demonstrates the importance of empirical validation in defining knowledge. While it is tempting to accept “expert”

opinion on organizational learning and effectiveness, testing those opinions in the “real” workplace provides a critical and often overlooked component that enriches the ongoing dialogue. It also provides a more inclusionary view of individual learning in organizations by accessing followers’ perceptions instead of only representing the viewpoint of those who have a vested interest in maintaining the status quo, such as leaders and managers. While Senge’s philosophy seems to provide avenues to challenge and change existing assumptions and power structures, it is very easy for organizational leaders to *espouse* commitment to learning without acting to demonstrate their commitment, thus subverting true change and continuing with their comfortable and accustomed ways of thinking and behaving. Workers are ideally positioned to see these gaps between words and action.

One of the problems with imposing a framework such as Senge’s on an organization’s activities is that one may end up creating the reality just by imposing the framework. This is an epistemological issue, or in more colloquial language, “beauty is in the eye of the beholder”. In other words, the research design may not have *captured* reality as much as *created* it. A different research design may have created a different reality. For example, if a different typology had been used, would the findings construct a different picture of leader-follower dynamics? If the

researcher had conducted focus groups or one-on-one interviews, would similar findings have resulted? Since the researcher did not observe any of the leader-follower relationships “in action”, an opportunity to corroborate the data was lost.

Although Senge’s roles manifest to varying degrees in PanCanadian, the roles themselves are sufficiently ephemeral that findings from this research are limited to the interpretations made within the confines of this study. It is still not clear whether these roles do in fact increase workers’ learning *motivation* or *capacity*, whether they are conceptually distinct roles with distinct components, or whether they form a gestalt that will be difficult to assess using a deconstructivist paradigm. Additional work is required to clarify the parameters of each of Senge’s suggested roles, to create stronger links and a common language between adult learning theory, leadership and workplace learning, and to further assess the efficacy of applying models such as these to measure and facilitate learning in the workplace.

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APPENDIX A: STATEMENTS USED IN SURVEY

Questionnaire Number	Statement Text	Construct Number
A. ANCHOR QUESTIONS		
50	In your opinion, how successful is your supervisor in creating a learning-oriented work environment?	AQ2
13	My supervisor's approach toward learning at work helps me feel more confident	AQ3
33	I feel better about myself as a result of my supervisor's approach toward learning at work	AQ4
49	Does your supervisor's behaviour help you learn at work?	AQ5
51	How do the actions of your supervisor influence the quality of your learning activities?	AQ6
52	How do the actions of your supervisor influence the quantity of your learning activities?	AQ7
B. DESIGNER/POLICY		
43	My learning activities are assessed during my performance appraisals.	DP1
28	My ongoing learning is a significant focus during my performance appraisals.	DP2

37	I have a personal development plan or learning contract with my supervisor.	DP3
34	It is difficult to challenge established procedures or rules in my workgroup	DP4
39	I am rewarded for engaging in learning.	DP5
21	I am expected to share what I learn with others as part of my job performance.	DP6
23	I am encouraged to take time out of my work schedule to think about my learnings from my experiences at work.	DP7
14	My supervisor has created forums for me to share information or best practices with my peers.	DP8
29	I am expected to be responsible for my learning	DP9

C: DESIGNER/RESOURCE

1	My supervisor provides me with resources to engage in learning.	DR1
26	I receive suggestions and “leads” on courses or other learning activities that I am interested in from my supervisor.	DR2
41	I am given time off work to engage in learning	DR3
10	My supervisor ensures I capture my learnings in writing and make them available to others	DR4

- | | | |
|----|--|-----|
| 19 | My supervisor has provided me with training in how to dialogue | DR5 |
|----|--|-----|

D: STEWARD/VISION

- | | | |
|----|---|-----|
| 35 | My supervisor says that learning is a high priority | SV1 |
| 9 | Learning activities are supported within my workgroup regardless of the external economic or political climate. | SV2 |
| 45 | My supervisor discourages learning that is not related to my workgroup's success in the company. | SV3 |
| 20 | My supervisor cares about my well-being. | SV4 |
| 47 | I am encouraged to develop a long-term personal vision | SV5 |

E: TEACHER/REALITY

- | | | |
|----|---|-----|
| 2 | I'm encouraged to gather feedback from customers and colleagues about my performance in order to challenge my assumptions about myself. | TA1 |
| 31 | My supervisor challenges the assumptions I make about myself | TA2 |
| 42 | My supervisor gives me frequent feedback on how to improve my performance. | TA3 |
| 7 | My supervisor is interested in generating many answers before focussing on a single "right" answer | TA4 |

F: TEACHER/MODELING

- | | | |
|----|---|-----|
| 44 | My supervisor shows that learning is important by engaging in learning for his/her own development. | TM1 |
| 6 | When I share problems with my supervisor he/she "fixes" it rather than helping me figure out how to solve it for myself | TM2 |
| 36 | It's hard to get my supervisor to listen to my point of view | TM3 |
| 15 | I am encouraged to share my viewpoints, even when they differ from my supervisor's | TM4 |
| 24 | My supervisor asks for my ideas and opinions. | TM5 |
| 8 | My supervisor shows appreciation for differing points of view | TM6 |
| 27 | My supervisor does not retaliate when challenged by others | TM7 |
| 17 | My supervisor encourages others to challenge her/his thinking or work practices. | TM8 |
| 5 | My supervisor tries to understand others' perspectives without persuading them to his/her own. | TM9 |

G: TEACHER/NURTURING

- | | | |
|----|---|-----|
| 25 | I am given opportunities to practice what I learn prior to using it "for real". | TN1 |
|----|---|-----|

- | | | |
|----|---|-----|
| 38 | I am encouraged to try experiments at work to test new ideas or skills | TN2 |
| 32 | My supervisor creates a climate where I feel comfortable expressing my opinion even when it is critical of the organization | TN3 |
| 11 | My supervisor explains the reasons behind the decisions that he/she makes so that I understand and can learn from them. | TN4 |
| 4 | My supervisor tends to blame people for mistakes or unfortunate events. | TN5 |
| 40 | My supervisor encourages me to share new ideas. | TN6 |
| 22 | I feel uncomfortable admitting to my supervisor that I have made a mistake. | TN7 |
| 3 | It is okay with my supervisor if I “just sit and think” at work | TN8 |
| 18 | We are expected to share our learnings from mistakes we have made. | TN9 |
| 16 | My supervisor encourages me to think about how my work impacts others in the company. | TS1 |

H: TEACHER/SYSTEMS

- | | | |
|----|--|-----|
| 12 | When problems arise, my supervisor looks for breakdown in the overall processes to help identify the root of the problem | TS2 |
|----|--|-----|

- 48 My supervisor critiques events or TS3
 problems to see if there is an underlying
 pattern.
- 46 When I have a problem my supervisor TS4
 helps me to rethink it from perspectives
 different than my own.
- 30 My supervisor encourages me to generate TS5
 creative or unusual solutions by
 interacting with other people or seeking
 information from sources outside my
 area of expertise (ie. "thinking outside
 the box").

APPENDIX B: FINAL SURVEY

DEADLINE: Please complete this questionnaire by **July 23, 1999**.

How to complete this questionnaire

1. The questions in this survey are formatted as statements written in first person singular, as if you were talking to yourself i.e. "I am happy at work". In responding, choose the response that most closely reflects your level of agreement with each statement by placing an 'x' or a check mark in the box under the appropriate label:

Sample question

A. I am happy at work.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please use only one type of mark such as a check mark or 'x' to respond. If you change your mind, please additionally circle the box with the mark that represents your final opinion.

Sample question

A. I am happy at work.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you are not sure about your opinion please use the "undecided" box.

2. There are 50 statements in total. Please answer all of them. Tests show that this questionnaire will take about **fifteen minutes** to complete.

3. "Workgroup" means the group of people that report to a common supervisor.

4. "Supervisor" means the person to whom you report and who does your performance appraisal. If you have more than one supervisor please choose one of them as the basis for your responses; do not switch between supervisors in responding to the statements.
5. The title of the position your supervisor holds is not important to this study. If your supervisor has a title other than "Supervisor" within the organization such as "Coordinator" or "Manager" or "General Manager", etc., you are still requested to fill in this questionnaire.
6. For research purposes some general personal information is requested regarding gender, years of service, educational level and occupational group. This information will be numerically coded and stored off-site from PanCanadian's offices. You are not requested to divulge your name, your department or workgroup, or the name of your supervisor.
7. At the end of the questionnaire there is a comment section for you to add any comments that you might like to share with the researchers.

Confidentiality

Individual responses will not be released either to your supervisor or any other PanCanadian employee. Your responses will be numerically coded and grouped together with those of other respondents. No responses will be stored in the PanCanadian buildings or on-line at PanCanadian. Neither the researcher nor anyone else will know which responses belong to which individual person.

Consent

The completion of this questionnaire automatically implies consent to participate in this study. If further participation is requested in the form of an interview, a separate consent form will be completed.

Right to Refuse

As the receiver of this questionnaire you have the right to refuse to participate in this study without consequence to you.

Inquiries

If you have any questions concerning this questionnaire or any aspect of this study please do not hesitate to contact the researchers, Zoe Agashae, _____ at (403) 230 0497, or Dr. John Bratton, University of Calgary, at (403) 220 2517.

Copy of Results

If you would like a copy of the results of this study, please send the section below in an envelope separate from your questionnaire to:

Zoe Agashae,
Room 526, Education Tower,
Graduate Division of Educational Research,
University of Calgary,
2500 University Drive NW,
Calgary AB T2N 1N4

-----Cut along this line-----

Name _____

Address/email: _____

Telephone Number (in case of difficulty with mailing)
_____ available Evenings? Y N

available Days? Y N

GENERAL INFORMATION

Please provide us with some information to assist in statistical analysis of the research (this information will not be shared or compiled in any way that might reveal your identity).

A. Gender:

(This data will help us analyse whether gender was a factor in how people responded to the statements)

Your gender: Female ☐ Male ☐

B. Gender of your Supervisor

(This information will help us determine whether there are gender differences in how supervisors behave toward learning in the workplace)

Gender of **your Supervisor**: Female ☐ Male ☐

C. Duration of employment at PanCanadian

(This will help us understand whether people's opinions differ if they have spent a longer time or shorter time with the company)

_____ years and _____ months.

D. Occupational Group

(This will help us understand whether occupation is a factor in how people responded to the questions) - If you are a supervisor please mark "supervisory" and not any other category, even if you are trained in one of the other categories.

Assistant	<input type="checkbox"/>
Clerical	<input type="checkbox"/>
Trade	<input type="checkbox"/>
Professional	<input type="checkbox"/>
Supervisory/management	<input type="checkbox"/>

E. Education

(This data will help us determine whether length of time in educational institutions influences the way people responded to the statements).

- | | |
|----------------------|--------------------------|
| High School | <input type="checkbox"/> |
| Certificate/Diploma | <input type="checkbox"/> |
| Technical Institute | <input type="checkbox"/> |
| Undergraduate Degree | <input type="checkbox"/> |
| Graduate Degree | <input type="checkbox"/> |

1 My supervisor provides me with resources to engage in learning.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2 I'm encouraged to gather feedback from customers and colleagues about my performance in order to challenge my assumptions about myself.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3 It is okay with my supervisor if I "just sit and think" at work.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4 My supervisor tends to blame people for mistakes or unfortunate events.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5 My supervisor tries to understand others' perspectives without persuading them to his/her own.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6 When I share problems with my supervisor he/she "fixes" it rather than helping me figure out how to solve it for myself

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7 My supervisor is interested in generating many answers before focussing on a single "right" answer

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8 My supervisor shows appreciation for differing points of view.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9 Learning activities are supported within my workgroup regardless of the external economic or political climate.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10 My supervisor ensures I capture my learning in writing and make it available to others.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11 My supervisor explains the reasons behind the decisions that he/she makes so that I understand and can learn from them.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12 When problems arise, my supervisor looks for breakdown in the overall processes to help identify the root of the problem.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13 My supervisor's approach toward learning at work helps me feel more confident.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14 My supervisor has created forums for me to share information or best practices with my peers.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15 I am encouraged to share my viewpoints, even when they differ from those held by my supervisor.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16 My supervisor encourages me to think about how my work impacts others in the company.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17 My supervisor encourages others to challenge her/his thinking or work practices.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18 We are expected to share our learnings from mistakes we have made.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19 My supervisor has provided me with training in how to conduct dialogue.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20 My supervisor cares about my well

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21 I am expected to share what I learn with others as part of my job performance.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

22 I feel uncomfortable admitting to my supervisor that I have made a mistake.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23 I am encouraged to take time out of my work schedule to think about my learnings from my experiences at work.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

24 My supervisor asks for my ideas and opinions.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

25 I am given opportunities to practice what I learn prior to using it "for real".

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

26 I receive suggestions and "leads" on courses or other learning activities that I am interested in from my supervisor.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

27 My supervisor does not retaliate when challenged by others.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28 My ongoing learning is a significant focus during my performance appraisals.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29 I am expected to be responsible for my learning.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

30 My supervisor encourages me to generate creative or unusual solutions by interacting with other people or seeking information from sources outside my area of expertise (ie. thinking "outside the box").

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

31 My supervisor challenges the assumptions I make about myself.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

32 My supervisor creates a climate where I feel comfortable expressing my opinion even when it is critical of the organization.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

33 I feel better about myself as a result of my supervisor's approach toward learning at work.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

34 It is difficult to challenge established procedures or rules in my workgroup.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

35 My supervisor says that learning is a high priority.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

36 It's hard to get my supervisor to listen to my point of view.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

37 I have a personal development plan or learning contract with my supervisor.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

38 I am encouraged to try experiments at work to test new ideas or skills.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

39 I am rewarded for engaging in learning.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

40 My supervisor encourages me to share new ideas.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

41 I am given time off work to engage in learning.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

42 My supervisor gives me frequent feedback on how to improve my performance.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

43 My learning activities are assessed during my performance appraisals

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

44 My supervisor shows that learning is important by engaging in learning for his/her own development.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

45 My supervisor discourages learning that is not related to my workgroup's success in the company.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

46 When I have a problem my supervisor helps me to rethink or reframe it from perspectives different than my own.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

47 I am encouraged to develop a long-term personal vision.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

48 My supervisor critiques events or problems to see if there is an underlying pattern.

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

49 Does your supervisor's behaviour help you to learn at work?

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

50 In your opinion, how successful is your supervisor in creating a learning-oriented work environment?

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

51 How do the actions of your supervisor influence the *quality* (depth, richness) of your learning activities? (A positive influence might mean you have a more meaningful, or applicable, or profound experience. A negative influence might mean you have a superficial, or irrelevant experience).

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

52 How do the actions of your supervisor influence the *quantity* (frequency) of your learning activities? (These are not restricted to formal courses, conferences or seminars, but include any and all learning activities such as mentoring, shadowing, "sitting in on", "finding out", etc.).

Strongly Agree	Somewhat Agree	Undecided	Somewhat Disagree	Strongly Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b. Comments:

Thank you for completing this questionnaire. Please return the completed questionnaire in the enclosed envelope to:

Zoe Agashae, Room 1161 Plaza, or alternatively to

Zoe Agashae,
Room 526, Education Tower,
Graduate Division of Educational Research,
University of Calgary,
2500 University Drive NW,
Calgary AB T2N 1N4

APPENDIX C: COMMENTS FROM SURVEY RESPONDENTS

RESP. NO.	COMMENT	THEME
26	I have been with my current supervisor less than 2 months. this made it difficult to answer many of the questions.	CHNG
39	I have only had this supervisor for 2 months. As yet we have not had a performance appraisal, nor have we developed a development plan together.	CHNG
83	over the last 5 years I have had more than 5 supervisors and the answers given above should reflect the average performance of my supervisors.	CHNG
104	Since I just got a new boss, that is why there may be some or a lot of undecided check boxes.	CHNG
124	unfortunately my supervisor is fairly recent <3 months and he is very busy. He has been unable to be a supervisor for me. My work team/team leader is my guiding light for day to day work. @ PCP there has been a lot of recent changes and for me has been several changes in the last 2 years. I have had 6 functional supervisors in that period	CHNG
157	please be advised I've only work (sic) for my current supervisor for 11 months. My answers would not have been so positive with my prior supervisor. Supervisors make a tremendous difference to my learning curve.	CHNG
159	the preceding responses were based on my recent supervisor who has since left our group. Rather than my current supervisor who has a different style and approach to learning.	CHNG

- 160 I am currently in a new role (started in march this CHNG
year) and the manager I work for started in
his/her work role in April this year. This newness
factor has tempered many of my responses. (I
haven't been part of the complete performance
management cycle yet with him.)
- 186 Unfortunately I recently changed supervisors I CHNG
have been working with my current supervisor for
the last year on a project. This explains why I have
a number of undecideds.
- 193 In the 4 1/2 years I have been with the company CHNG
this is the 4th supervisor I've had & the 6th
organizational change including three changes in
structure immediately above my supervisor. My
personal development plan has been greatly
impacted by these, one of which was due to
economic environment. by impacted i mean
ignored. ie what is best for company despite
documented development plans.
- 1 Supervisors at PCP need to engage in performance CULT
reviews that minimize whitewashing your
performance. This meaning we should train them
to get better at giving positive feedback balanced
by areas for improvement. So far things are
weighed heavily on the good but occasionally
(actually more & more often) no constructive
criticism
- 29 If you don't have a functional manager as a CULT
supervisor, you don't have the flexibility to take
courses that are not directly related to your
supervisor's function. This may be a disadvantage
for people who like to develop other skills not
directly related to the job
- 36 As learning new skills is one of my personal goals CULT
my supervisor only negatively impacts this activity
slightly. A more open or positive individual would
make it easier to learn. The last comment I heard
was to look at appropriate courses but not too
hard as it is a tight year financially at PCP.
Stewarding intellectual capital?

75	Supervisors are strongly encouraged by management to provide positive learning environment	CULT
91	Our company is focused on employing highly skilled and knowledgeable employees. they strive to maintain and continuously improve this knowledge base through continuous learning. Employee learning is valued highly as is the employee and what they bring to the company. This is apparent throughout the company culture.	CULT
92	I have worked for other corporations which place far more emphasis on training/career development than PCP. the commitment can be measured in \$/employee by year. I think its too bad that this is not an area of stronger financial commitment. But when I am proactive the company has come through	CULT
138	Pancanadian has placed fairly significant importance to learning at work. This is also reflected in my supervisor's attitude towards learning at work. The downside to learning at work occurs when work commitments or work levels are high and the time invested in learning drops. This has been more common recently and provides a challenge for learning at work in the future.	CULT
152	learning is still second to doing the work at hand. I don't believe many managers can value the thinking of a better method while the work piles up even if re-work is a major contributor to the load.	CULT
156	learning in the workplace is more dictated by an individual rather than a supervisor. Supervisor only provides opportunities - up to individual to take advantage.	CULT

- 183 learning in the workplace to me is a day to day enjoyment. You learn from everyone you speak with or work with and from every task you perform or project you work on. After many years in the company nobody really tells you what to learn, it is just a natural occurrence and you teach people whenever the opportunity arises. CULT
- 188 overall my supervisor is very positive and supports performance management with positive feedback. She encourages learning however the company restricts learning by reducing the education budget. CULT
- 11 interesting set of questions. you didn't apparently cover learning styles at all - that might be the more interesting data! DSGN
- 40 re: question #45 depends upon whether the course or event is free of cost or costs \$2000 (or takes up several days of work time). This qualifier does not include mentorship, which I am always encouraged to take advantage of. DSGN
- 55 the questions should have been proofread one more time. DSGN
- 103 question 49 is incorrectly worded otherwise a good questionnaire DSGN
- 182 the survey's approach gives me the impression that the assumption is that the supervisor creates the environment for learning vs it being of the individuals initiative to create it - a shared model vs one or the other. DSGN
- 190 most of my work is done without supervision. My manager does not interfere with decisions that are made. The questionnaire, in some ways doesn't work well for the way we conduct business. Questions are answered the best way I could giving (sic) the statements. DSGN

- 68 Due to my position and overall perceived impact to GNDR
the company, my GM's lack of understanding of
what I do and his lack of curiosity to find out - I
find that I am on my own in terms of how I am
evaluated and compensated. Learning is limited
and frowned on if it is not computer related,
whereas others of the same position spend
substantial time on field training and trips that I
have been told I am not to go on due to the lack of
relevancy to my career development. I hate to say
it but the apparent favoritism seems to be gender-
related in this group
- 42 please note i have got a lot of undecided simply NEW
because i have only been here 2 months. don't
know as of yet.
- 43 I have just returned from a 2 year leave of NEW
absence. i have been working for my current
supervisor for only 2 months.
- 46 my answers would be different if I were at a higher PERS
level within my group.
- 142 I benefit most from just-in-time learning which is PERS
given prior to a change in work flow or
improvement in systems or software.
- 134 my supervisor tends to beebop at picking favorites RACE
lately. you never know what kind of a day you're
going to have. Some are treated harder than
others due to race. basically some are allowed
excuses and others not. the supervisor is
intelligent and well-liked, but the work
environment is very stressful lately.
- 89 the biggest problem is the supervisor doesn't have SUP
the time for this kind of activity. it is made aware
it is important but its completely left up to me to
do the learning.
- 114 I have just recently joined x group and have not SUP
been around sufficient time to adequately
access(sic) the situation so I will answer the
questions base on experiences in the old group I
just departed. Unfortunately a new supervisor was
put in place recently which prompted my
departure. Call me I'll tell you more.

- 167 My supervisor is very insecure, rigid and preaching. He is always stating the obvious/motherhood statements. He is not concerned if I have a learning experience at work or not. He is always highly critical and judgemental [sic] and does not tolerate experimentation and mistakes. SUP
- 171 I manage my own learning, my supervisor has almost nothing to do with it. We have roles for behaviour. ie. Think out of the box; one topic is good, the other BAD. We end up doing the same old thing and calling it new. Therefore most new learning can't be applied. SUP
- 21 As an example of learning at work I enrolled in a night time certificate course. I've only taken 2 courses so far and of those did extremely well. A's in both. My supervisor did nothing to acknowledge that accomplishment or encourage me to continue or share those new learnings with my peers. In fact I feel discouraged to continue. SUP
- 18 At PCP all of the supervisors I've had dealings with encourage innovative thinking & new ideas. I feel this is very important since there is always a better way of doing things either now or in the future. SUP
- 33 I appreciate my supervisor very much. very professional, very positive, brings out the best in us all. SUP
- 45 My supervisor and PCP in general have always been supportive of my learning progress. I am provided opportunities to interact in areas that are new to me, and I have resources to tap into when I run into areas that I have problems in. SUP
- 65 i believe pcg provides and encourages a learning environment for me to learn. I also believe it is my responsibility to learn. SUP

- 84 I recently transferred to x department from y and SUP
must admit I am pleasantly surprised as to how
much I enjoy working in this new department. The
co-workers are very friendly and knowledgeable.
my new supervisor is one of best to date, in my
career. I have learned so much already and will
continue to do so in this new position.
- 116 I am a recent graduate of the U of C. I acquired SUP
my concentration in MIS. Although Energy
companies do not provide a very high wage for my
field, I joined with one due to 2 supervisors that I
have had since I started. They have provided an
immeasurable learning experience not only in a
technical aspect, but one about people, business
and self-improvement.
- 118 I have been very fortunate in my first year of SUP
learning and training because of my supervisor
and colleagues. They are always encouraging me
to learn as much as I can and they quiz me to
make sure I really understand what I am doing.
- 128 What I experience is a work environment where SUP
learning is not a separately addressed task but
where it is an integrated part of every day life. the
biggest challenges are: the amount (lots!) of
learning material available, filtering this material,
- 128 finding the best method to learn for each instance, SUP
clashing personal and work schedules, and
admitting that learning does not stop (many
people want a break to stand still for awhile)
- 132 We are encouraged to learn on our own with SUP
minimum supervision
- 135 my supervisor provides an excellent environment SUP
for learning, given the criteria that are implied in
this survey. she also creates and encourages me
to learn through taking on new assignments and
providing support by coaching us through
completing the assignment

- 38 I have an excellent rapport with my supervisor SUP
who encourages good morale in our department.
however the company as a whole believes the only
employee of value is one who has degrees and/or
a number of educational certificates. experience
(no matter how many years) is sadly treated with
irreverance [sic] - especially those of us in the
administrative assistant category. We're thought
of as expendable or not having a real job.
- 148 although i have not worked with this supervisor SUP
for an extended length of time, I have some
definite opinions. Its interesting to see some of the
contradictions that seem to appear through this
survey. I think perhaps that she has a history of
control(which may be hard to overcome with
current efforts. I'd be interested in an
interpretation of THIS survey...
- 180 the heavy workload means learning activities must WKLD
be structured closely into tasks. I am a very
proactive out of the box type and this is valued
and important in my job. I tried to enroll in a
"Creativity" course at U of C but not enough
people were interested to hold the course.

APPENDIX D: ETHICS COMMITTEE APPROVAL**EDUCATION JOINT RESEARCH ETHICS COMMITTEE****CERTIFICATION OF INSTITUTIONAL ETHICS REVIEW**

This is to certify that the Education Joint Research Ethics Committee at the University of Calgary has examined and approved the research proposal by:

Applicant: Zoe P. Agashae
of the Department of : Graduate Division of Educational Research
entitled: The impact of leadership style on learning in the workplace

(the above information to be completed by the applicant)

99-01-06
Date

Michael C. O'Neil
Chair, Education Joint Research Ethics Committee