Synergistic Leadership: The Leadership Paradigm for the

Knowledge-Based Global Socio-Economy

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Organizational Leadership

by

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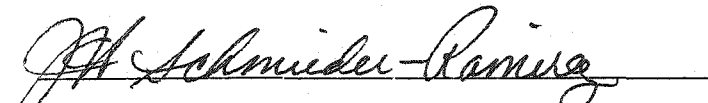
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Under the guidance of a Faculty Committee and approved by its members, has been submitted to and accepted by the Graduate Faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

April 16, 2002

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Dedication

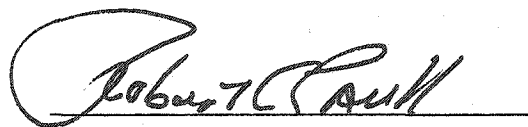This dissertation was not a sole endeavor, rather it was an effort of my family, my wife, three children (George, Raylene and Stephanie) and me; hence, we together dedicate this dissertation to my parents, my loving mother and father, Lu'isa Mataele Uata and 'Uliti Uata, for their vision and lifelong commitment to educate their children through higher education.

This dissertation is dedicated to my loving mother, who is the core of my life. Her love defines the essence of my life. It is a love that I cannot express in words, a love that provides the peace and comfort in my most trying times, a love that inspires the courage and the confidence to continue on and push forward, a love that is constant in times of chaos, and a love that gives meaning to the word eternity. The dedication of this dissertation to my mother reflects her lifetime of sacrifice, dedication, and support. This dissertation is dedicated to the giant that I stand on and to my hero, my loving mother: may this small token of appreciation bring you joy and happiness.

This dissertation is dedicated to my father, 'Uliti Uata, whose character and wisdom have mentored and shaped my leadership character. To my father whose lifelong leadership for our family provided context and meaning to my institutional and theoretical training. This dissertation is dedicated to my father, whose lifetime sacrifices and dedication have embedded the foundation in our family that knowledge and wisdom are eternal principles and a spiritual pursuit; a legacy that he has provided so that future generations can build on it. The completion of this dissertation brings to closure the vision to which my father has dedicated his entire life. Thus, I dedicate this dissertation to the hero and leader who has championed this vision for our family. This is to my father

who has modeled the way, that "fatherhood" is an eternal calling and that effective leadership starts and ends at home.

Finally, to my wife, Kaliopeta Piutau Uata, and to our three precious children, George, Luisa (Raylene) and Stephanie, who are the make up of my life, and would lessen their contribution to be thanked separate from me; we have done this as a family.

Acknowledgements

My sincere thanks to Barbara Cloninger for reading and editing my various papers throughout the doctorate program. Her feedback, opinions and insight always kept me grounded. I would like to applaud my fellow Pepperdine colleagues David Braga and Tyler Tilley for their support, friendship, and help in understanding the true meaning of knowledge creation, sharing and collaboration.

Vita

ACADEMIC HISTORY

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Abstract

Synergistic Leadership: The Leadership Paradigm for the

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By: Tevita (Dave) Tu'i Uata

July, 2003

The direction of this study was inspired by the recent focus of knowledge both as

the driving force that has transformed the global socio-economy to be knowledge based

and the realization by organizations as a strategic and valuable asset. Synergistic

performance is defined as the collective intelligence and the talent base of a workforce

whose focus is to co-learn and co-create knowledge. Synergistic performance is a key

strategic deliverable required of leaders to lead a work force that can succeed and

command global domination in the new knowledge-based global socio-economy.

The transition of the global socio-economy from task/labor-based to knowledge-

based has necessitated a need to reexamine existing leadership theories. The new

leadership paradigm will need to address the leadership requirements in a knowledge-

based global economy. The synergistic leadership prescribed by the study facilitates the

integration of talent-based and collective learning, creation, capturing, dissemination, and

application of knowledge without the restriction of time, space and cultural bias.

This study will seek to find and define a significant gap in the leadership

paradigm between a knowledge-based organization and a non-knowledge-based

organization. In addition, this study will conceptualize an innovative leadership paradigm

that bridges the theoretical leadership gap. This study will analyze the required leadership

attributes a leader should possess in an organization that encourages a workforce to co-

learn and co-create knowledge as a learning community to synergize organizational performance.

Forty-seven participants that belong to six teams in a Fortune 50 company were subjects in the study. Four transformational leadership attributes were studied: Idealized Influence, Inspirational Motivation, Intellectual Stimulation and Individual Consideration.

The research findings revealed that the subjects ranked Individual Consideration highest as a leadership attribute that encouraged co-learning and co-creation of knowledge, Intellectual Stimulation as the second highest . The results also revealed a significant correlation relating to one's educational level, Intellectual Stimulation and Idealized Influence. The results of this study sustain the findings of the literature that argues that constituents/followers are leaders in their own right and that they demand opportunities to co-learn, co-create and co-lead knowledge-gaining experiences for synergistic performance.

Chapter 1

Introduction

How shall I talk of the sea to the frog,

If it has never left his pond?

How shall I talk of the frost to the bird of the summerland,

if it has never left the land of its birth?

How shall I talk of life with the sage,

if he is prisoner of his doctrine?

(Chung Tsu, 4th Century B.C., as cited in Fantini, 2002)

The world we have made,

as a result of the level of thinking we have done thus far,

creates problems we cannot solve at the same level of thinking at which we created them.

(Albert Einstein, as cited in MacHale, 2002)

During the 1900s, the industrial revolution emerged as a driving force that transformed the world both economically and socially (Ansoff, 1990). The significant impact of the industrial revolution that was argued by Drucker (1978) in his book *The Age of Discontinuity* and other scholars had more to do with the mindset and philosophy of industrialization rather than its practices. The mindset and the philosophy of industrialization were grounded on the belief that, in order to gain mega profit, mega machines had to be created so the cost of creating the machine was minimum as compared to the economy of scale gained by the output level (Ansoff, 1990). Leaders during the industrial revolution were measured by their capability to systemize the

laborers of a workforce into a mega-human machine that could economize large scales of production output (Northouse, 1997). Hence, people were treated as changeable parts of a machine.

However, in the past 50 years, scholars and professionals, such as Drucker (1978), Freidrich (1945), Machlup (1980), and Porat (1977), to name a few, identified a new driving force (knowledge/information) with tremendous momentum that directly challenges the philosophy of the industrial revolution. These scholars also argue that knowledge has transformed the global socio-economy into a knowledge-based system.

As far back as 1958, Machlup (1980) drew attention to the increasingly dynamic and driving force of information/knowledge in the United States service economy. He estimated that knowledge production at that time accounted for 29% of the United States' Gross National Product (GNP). Porat (1977) added to the validity of Machlup's estimation when, in 1967, he conducted a detailed analysis of the United States' national income and accounts. Further, he estimated that the information/knowledge sector accounted for 46% of the United States' GNP. Although production has and continues to be a vital component of our socio-economy, the production factor of our economy too has been transformed as a consequence of the momentous force of knowledge. Drucker (1978) suggested that knowledge was the dominating competitive driving force of the economy of the United States. He further predicted that, by 1975, the knowledge sector would account for 50% of the GNP.

Marchetti (1981) and Huber (1984) made a more dramatic presentation of social consequences resulting from the explosion of knowledge/information, in which they argued that not only the economy, but also society had already been transformed by the

driving force of knowledge. At that time, Marchetti and Huber argued that the socio-economy had become completely knowledge based. A decade earlier, Bell (1976) suggested that, if such changes took place in the economic arena, the social landscape would automatically follow the transition of the economy. These scholars depicted that the natural progression was to move away from the traditional industrial society, with its emphasis on manufacturing, task, and labor, and more toward a knowledge and information base. Bell (1976) referred to this societal transition as the coming of the post-industrial society. Wojciechowski (1983) analyzed the increasing significance of knowledge in the evolution of our society and economy, and emphasized the importance of understanding and managing the knowledge ecology. Wojciechowski also drew attention to the realization that human civilization was becoming increasingly dependent on the creation, storage, and dissemination of knowledge.

The scholastic and industrial construction of the leadership paradigm has evolved for over a century to become a strategic imperative in business success (Northouse, 1997). Since the 1900s, scholars and practitioners have been deeply involved in the ongoing shaping and reshaping of the leadership paradigm to accommodate the impact of driving forces that may have threatened the strategic viability of the leadership paradigm (Ansoff, 1990). During the 1900s, when the industrial revolution emerged as a significant driving force, scholars and practitioners of the leadership paradigm created leadership theories such as the Great Man theory, the transactional theory and the situational theory in order to protect the applicability of the leadership paradigm to business (Northouse, 1997). Now that scholars and professionals such as Monge and Fulk (1999), Nonaka and Takeuchi (1995), and Nadler, Shaw, and Walton (1995) have identified and sustained that

knowledge in the past 50 years has emerged to be a significant driving force, and, more specifically, that knowledge in the past decade has transformed the social, political, economic, technological, and global scene to be knowledge based, the leadership paradigm once again is in a life-threatening dilemma to maintain the strategic viability of the leadership paradigm.

Problem Statement

There is a lack of conceptual and empirical studies that have investigated the role of leadership in leading workers in a knowledge-based socio-economy. Specifically, there is a lack of study that has investigated the leadership attributes that encourage knowledge workers to learn and construct knowledge collectively.

Purpose of the Study

The purpose of this study is to examine the impact of leadership attributes that would encourage knowledge workers to co-learn and co-construct knowledge with co-workers.

This study will utilize the Transformational Leadership Theory to operationalize leadership attributes. Transformational Leadership Theory defines leadership attributes into four categories, which will be discussed in detail in later chapters. Further, the study will utilize the perception of constituents to answer and validate the research questions of the study. Constituents who are defined as co-workers who work on the same team with one leader will be asked about their ideal and actual perceptions of their leaders' leadership attributes that influence them to learn and think collectively with their co-workers.

Research Questions

1. To what extent do actual transformational leadership attributes as perceived by team members encourage them to co-learn and co-create knowledge?

2. What order of importance do constituents place on actual transformational leadership attributes that encourage them to co-learn and co-create knowledge?

3. To what extent do ideal transformational leadership attributes perceived by constituents encourage them to co-learn and co-create knowledge with other constituents?

4. What is the order of importance as perceived by constituents of ideal transformational leadership attributes that encourage constituents to co-learn and co-create knowledge with other constituents?

5. What are the differences between actual and ideal transformational leadership attributes perceived by constituents that encouraged them to co-learn and co-create knowledge with other constituents?

6. What are the relationships between "actual" and "ideal" leadership attributes as perceived by constituents that encourage them to co-learn and co-create knowledge with other constituents?

Knowledge as an Organizational Asset

Leaders of organizations now recognize that, in a knowledge-based economy, knowledge and the capability of a workforce to collectively gain, share and apply knowledge is an asset of enormous value to that organization, more so than other assets such as buildings, machines, inventory, and cash. Because assets must be managed for

the greatest possible return on investment, many argue that knowledge of an organization and its capability to collectively think, share and apply knowledge need to be developed so that it may be applied to future organizational opportunities and challenges (Stewart, 1997; Senge & Carstedt, 2001; Drucker, 1994). The realization that workers' collective job experience, academic knowledge and ability to think collectively are assets of enormous value to organizations has sprung enormous interest among scholars and professionals in how to capture, disseminate, and apply knowledge organization-wide.

Knowledge Management

Scholars and professionals have prescribed knowledge management as the management tool to capture, disseminate, and store knowledge (Boose, Bradshaw, Koszarek, & Shema, 1993; Davenport & Prusak, 1998; Dieng, Corby, Giboin, & Ribière, 1998; Macintosh, Filby, Kingston, & Tate, 1998). These authors argued that knowledge management involves the identification of knowledge, developing related processes to transfer knowledge, and applying knowledge to fulfill organizational objectives for the greatest return on investments. Hence, knowledge-management systems are set up to maintain knowledge of corporate histories, experiences, and expertise that long-term employees, until this time, have kept stored in their minds. These authors further argued that knowledge-management systems—and not the workers—are constructed to be the brains of organizations. In the past, not managing knowledge has been detrimental to organizations. With the implementation of knowledge-management systems, valuable knowledge that resides in employees' minds is captured by an electronic central system before employees move forward. This ensures the preservation of knowledge without bias or error to assist future employees working on organizational objectives (Davenport

& Prusak, 1998). Further, digital and computer technology increases the speed of both knowledge integration and dissemination wherever the organization does business.

Limitation of Knowledge Management

Discourses among scholars and practitioners regarding the management of knowledge highlight a predominant bias toward digital tools for knowledge capture, transfer, and utilization (Reeves, 1996). Although digital technology has the capacity to capture, store, and disseminate knowledge, Stern and Barley (1996) argue that these technologies unfortunately are only rational, static, and without context. Nahapiet and Ghoshal (1998) submit that computer technology cannot imitate both the individualistic human behavior of thinking (learning and creating knowledge) and the collective social behavior that is to learn and think together to solve problems and seize opportunities. Hence, computers cannot form social relationships where the synergy of collective thinking of people can create greater knowledge than the sum of each person in a social unit. Hence, centralized computerized repositories of knowledge are unable to pinpoint certain knowledge and ensure that people will see, share, create, and apply it to gain competitive advantage and the best return on investment for companies.

Knowledge-management theorists have reflected their work on the machine approach that dates back to the industrial revolution. This view seeks to solve the organizations' need to capture, share and apply knowledge by building elaborate computers and telecommunication network. However, this view only considers a partial perspective of organizational learning, creation, and sharing of knowledge (Bartlett & Ghoshal, 1995). Boland, Tenkasi, and Te'eni (1994) argue that, by viewing knowledge with this bias—unproblematic, predefined, and prepackaged—we ignore the core that

creates knowledge—human beings and the relationships among them. The centuries-old machine approach has a restrictive perspective to knowledge, and undoubtedly has a detrimental influence on a firm's social learning and adaptive capabilities competing in a knowledge-based economy (Drucker, 1994). Unfortunately, this situation can only worsen with time because of the dynamically changing environments and the ever-increasing demand for multiple interpretations and creation of knowledge for application commanded by the knowledge-based socio-economy. As the environment demands new ideas to create new products, leaders must come to grips with the fact that a machine and a computer cannot generate ideas; people and their relationships synergize their capability to think and produce new and innovative ideas.

Knowledge as a Human Function

The shift from the informational process and mechanical paradigm to human and community learning, creation, and utilization of knowledge is a deeply personal and relational process (Cunningham, 1992). Wheatley, Willett, and Copeland (1998) argue that knowledge resides in the people and not in the collection medium.

The concept of knowledge involves the interpretation of data, information, images, and symbols by an individual and/or group of people facilitated by cognitive, psychological, and social domains to produce new ideas that can capture opportunities and eliminate threats (Knowles, Holton, & Swanson, 1998). Knowles further submits that the quality of knowledge is a function of the quality of individuals, the relationships that exist among the individuals and the context that necessitates the learning and creation of knowledge to solve problems and capture opportunities

Knowledge as a Function of Community

Scholars and practitioners, both in business and in education, offer theories that assist the endeavor to recognize knowledge as a vital organizational asset that should be managed for optimum return on investment and as a medium to gain global competitive advantage. Schein (2001) and Senge and Carstedt (2001) prescribe that knowledge is passively learned from contexts/situations in which people interact as a collective learning community. Knowles et al. (1998) add that the interpretation of data and information about knowledge depict a learning process that involves people, relationships, cultural, and situational context.

However, social constructive theorists Davis and Mason (1989) and von Glasersfeld (1984) strongly argue against the learning community approach. They submit that the collective learning of knowledge is a passive approach of gaining, sharing, and disseminating knowledge. These theorists argue that knowledge is not passively learned; rather, knowledge is actively constructed individually and collectively (co-construction of knowledge) within a context and situation to solve problems and gain opportunities. Hence, students who are in a class together can gain much more knowledge if they create knowledge individually and collectively rather than waiting passively for the instructor to teach them.

However, this study argues that the approach of constructing knowledge or co-constructing knowledge is not in contradiction with the learning community (co-learning). Rather, the two constructs are interconnected/integrated into a comprehensive framework to form a new and holistic paradigm—a community synergized through co-learning and co-construction of knowledge.

Learning communities that co-learn knowledge and communities that co-construct knowledge will from this point on be referred to as a community of co-learning and co-construction of knowledge as an integrated paradigm. An operational definition of this comprehensive model is an established social communication pattern that emerges as individuals co-learn and co-create knowledge in knowledge-based communities (Monge & Contractor, 2003). This model includes personal contact, team collaboration, strategic alliances of multinational firms and virtual organizations. This model also depicts knowledge as both (a) an organizing principle that organizes employees into a social structure (community) that is defined by the social communication pattern of knowledge flow, and (b) a production unit that is created/co-created and learned/co-learned by an individual or a community.

As the world transitions into the knowledge-based economy, technology increases the complexity in the social, political, and global arenas. These complexities that bring about fast, dynamic, multi-dimensional and forceful changes necessitate a community of people that can come together and synergize their learning capability, co-learn and co-create knowledge to make rapid and effective decisions. Leadership plays a crucial role in developing knowledge workers to think collectively in order to synergize their collective intelligence. Current leadership models still operate out of the industrial revolution paradigm that is labor/task based, individual based, mechanical based and passive based; the leadership paradigm will have to undergo a radical transformation to deal effectively with the momentous and forceful demands of the new knowledge-based socio-economy.

Significance of the Study

Growing interest in knowledge stems from the realization that, in an information-based economy, knowledge is a significant asset and driving force behind organizational success (Machlup, 1980). Knowledge must be learned, created, retained, disseminated, and applied to future organizational problems (Drucker, 1994; Stewart, 1997). As leaders encounter the impact of the knowledge-based global economy, the strategic significance of organizations' collective geniuses producing break-through knowledge necessitate the urgency for leaders to study how to influence knowledge workers to co-learn and co-create knowledge. Organizations have long sought answers from theorists and professionals from various fields of expertise such as leadership, management, organizational behaviors, knowledge management and strategic management; however, these pioneers have fallen short of a full explanation of the role of leadership in leading knowledge workers to co-learn and co-create knowledge. This enigma still requires much research, with particular concentration on a leader's role in facilitating other leaders with his or her own knowledge, ultimately understanding the dynamics of social learning and the creative process of knowledge.

This study utilizes a research methodology approach to gain insights from the perception of respondents. This methodology allowed the researcher to gain intrinsic insights to the respondents' responses about their leaders' attributes.

Terms and Definitions

The following terms and definitions will be used throughout this study.

Constituents. Team members who consider themselves equal to one another in the workplace, who have the same formal leader.

Knowledge. Processed information that has been filtered and interpreted through an individual's value and belief system.

Co-learning of knowledge. The operational definition that defines the collective learning function and approach of a learning community or team. Some scholars consider learning as a passive mindset; they share a belief that knowledge can only be learned between constituents. Hence, learning communities are grounded with the idea that constituents need to learn what other constituents know.

Co-construction of knowledge. The opposite of co-learning. Co-construction of knowledge is built on the belief that constituents construct new knowledge that individuals did not know before. Hence, a team made up of civil, electrical, structural and mechanical engineers can actively co-construct a model of a high rise or a model of an airplane that, as individuals, they could not have built. The concept of co-construction values the approach that, from their respective knowledge bases, these engineers came together to actively co-construct a new model that they did not know. Hence, this concept purports that knowledge is not passively learned; rather, it is actively constructed between constituents.

Community of co-learning and co-construction of knowledge. A holistic model that looks beyond the conflict of the two concepts and sees value in aligning co-learning, which is a passive approach, and co-construction, which is an active approach, to a complete paradigm. It is the belief of this author that one of the approaches is incomplete and dysfunctional without the other; hence, a team cannot actively co-construct knowledge without collectively learning from one another. This holistic model redefines

the paradigm of a learning community by embracing the co-constructive element of knowledge.

Synergistic leadership. A new leadership model that embraces individual talent and the collective talent of an organization; co-learning and co-construction of knowledge; and co-leading that allows individuals naturally to emerge to lead with authority or position.

Knowledge based global economy. A global economy is one that relies heavily on information and knowledge to be functional and lucrative.

Synergy. A phenomenon that exists when people generate a sum output that totals more the sum of all of its individual parts.

Task orientation. A style of leadership that operationally depicts the orientation that a leader shows toward his or her people with strong concern about tasks to be accomplished by constituents, and less concern for the relationships of the team.

Relationship orientation. A style of leadership that operationally depicts the orientation of a leader toward his or her people with strong concern about relationships between team members and less concern about tasks to accomplish by the team.

Knowledge orientation. The focus of leaders to learn, create, share, disseminate, and apply knowledge with team members.

Transformational leadership. A process of interaction whereby the leader engages with followers, in such a way as to build strong personal relationships so that the human conduct and self interest of constituents are synergized. This dissertation utilizes the definition of Bass and Avolio (1990), in which they conceptualize transformational

leadership into four conceptual constructs: Idealize influence, Inspirational motivation, Intellectual stimulation, and Individualized consideration.

Idealized influence. A transformational leadership attribute where followers trust and identify with operating principles of the leader. More important, followers, beyond logic, are emotionally identified with the leader.

Inspirational motivation. A transformational leadership attribute where followers are provided with symbols that are emotionally appealing for organizational goal achievement.

Intellectual stimulation. A transformational leadership attribute where followers are encouraged to question their own way of doing things, ideologies, and thinking styles.

Individualized consideration. A transformational leadership attribute where leaders are genuinely interested in developing followers.

Transparency. The ability to have firsthand and real-time knowledge of people, without the barriers of time and space and the bias of cultural norms.

Chapter 2

Review of Literature

This chapter is divided into three sections. The purpose of this chapter is to

conduct a comprehensive review of related literature so that the study is grounded on a

concrete conceptual framework that is supported by the works of scholars and

professionals that have depth and history. This chapter will first review the literature on

knowledge in order to begin the construction of the framework for the study. Further, the

literature will be reviewed in the area of technology, sociology, economy, and leadership

in order to expand the framework of the study to capture the implications of knowledge.

Second, an in-depth analysis of the leadership literature will be reviewed to ground the

dissertation as a leadership study. Finally, literature in adult education, learning, teaching

and social cognition will be reviewed in chronological order and included in the

framework of this study in order to understand how knowledge is created and learned

both from a cognitive and social perspective. At the conclusion of this chapter, a

comprehensive framework will be established from related literature as the conceptual

basis of this study.

Schmieder-Ramirez's (2002) Social Political Economic and Legal (SPEL)

diagnostic model will be utilized to organize and analyze knowledge as a driving force

and the implications of knowledge. Further, the first section will conduct an analysis of

the implications and consequences of knowledge on technology, society, and economy on

leadership.

The second section of this chapter will review the literature on leadership. A

historical analysis of the leadership analytic framework will be conducted to gain a

comprehensive understanding of the leadership paradigm. Second, a gap in the leadership framework will be identified through the lens of the knowledge-based global socio-economy. Third, a leadership model will be conceptualized to meet the requirements of the knowledge-based global socio-economy.

The final section will review the literature on the nature of an adult learner to operationalize the subjects that participated in the study. Further, a literature review will be conducted on the learning and knowledge construction theory both from an individual and social standpoint to operationalize co-learning and co-construction of knowledge. Finally, a summary of the chapter will be provided as a conclusion.

The SPEL Model

This first section will analyze the literature to validate knowledge as a driving force and the implications of knowledge, thereby providing a conceptual support for the knowledge-based global socio-economy. In order to provide depth to this section's conceptual analysis, the SPEL model of Schmieder-Ramirez's (2002) was selected due to the merit of the model's discipline, rigor, depth and flexibility. Inspired by Kurt Lewin, Schmieder-Ramirez (2002) designed her model to assist scholars and professionals in conducting in-depth analyses of driving forces and the implications of the driving force.

The SPEL model is divided into two parts (Table 1). The first part of the model challenges the user to identify a driving force. The second part of the model challenges the user to identify consequences and implications of the driving force. Schmieder-Ramirez (2002) categorized the implications of driving forces into five categories: social, political, economic, legal and technology. The model provides three levels of consequences for each of the categories to provide depth to an analysis. The Schmieder-

Ramirez model provides the flexibility to meet the need of a situation or an issue that

necessitates analysis. Thus, this model provides discipline through its structure;

comprehensiveness through the categories of implications; rigor and depth through its

levels of consequences of analysis; and flexibility through the adaptability of the

framework to various needs. Based on the merit and applicability of the model to this

section, the SPEL model of Schmieder-Ramirez was used to analyze knowledge as a

driving force and to show its implications on leadership theory.

The first of the part of this analysis will construct an operational definition for

knowledge as a driving force. Then, the analysis will look at the implications of

knowledge. The study will adapt the SPEL model's five categories from society, politics,

economics, legal and technology-to-technology, social, economic and leadership.

Table 1

Knowledge as a Driving Force

Technology	Social	Economic	Leadership
World-wide digital infrastructure	Unfreeze old tradition of physical or co-location	Knowledge-based economy	Global transparency
Knowledge flow through the digital medium	Move toward new global connections and relationship	Transition of organization	Global re-segmentation
Globalization	Individuality emerges on the global scene	New market individualized segmentation	Global understanding of individuals

Note. Schmieder-Ramirez SPEL Model (2002), PepperdineUniversity, Culver City, CA.
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Knowledge

Knowledge is an organization's greatest asset. Leaders must prioritize these assets

in order to achieve a high return on investment. Cooper (1993) purports that the reason

why the knowledge of a workforce is so important is because physical things/assets are first constructed mentally by people's knowledge. Thus, airplanes, buildings, computer systems, businesses, processes, tools, rules, money, etc. are all physical things that were first created mentally before they were transformed into a physical reality by an individual or a group of people.

Moser and Vander Nat (1995) define knowledge as information and data that are processed by an individual through his/her cognitive and belief system. Moser and Vander continue to explain that knowledge requires that a belief condition be appropriately related to what an individual believes is true according to their own belief system. Knowledge, then, is a deeply personal phenomenon that is determined by an individual's belief and cognitive system. Hence, knowledge is a deeply personal issue. To illustrate that knowledge is a deeply personal issue, imagine ten people observing one phenomenon; we can end up having ten different versions from the ten different people who observed the same phenomenon. Although every individual from a physical perspective cognitively process information the same way, belief systems of individuals are all different, and thus, different people observing the same phenomenon end up with their personal knowledge of the same phenomenon dictated by their value and belief system.

Knowles et al. (1998) explain that, when adults utilize their knowledge, there is an innate instinct to utilize their knowledge to gain benefit and eliminate threats. From a social standpoint, Knowles et al. further purports that, because of this innate instinct, adults choose to come together into a social unit (a team or an organization) to

collectively learn and create knowledge to gain greater returns on their effort and feel more protected.

Knowledge as a Driving Force

Knowledge and information are today's most significant driving forces. Wojciechowski (1983) purports that knowledge is the pivotal factor that has driven the progress of civilization, and as a society, we have become socially dependent on knowledge. Bell (1976) asserts that knowledge and information are the new currency of the information age, and that such forces have transformed our socio-economy throughout the globe. Drucker (1978) argues that all innovation and progress are driven by knowledge.

Scholars and practitioners have depicted knowledge as a significant force that has and will continue to transform the socio-economy globally. This section will analyze the implications of knowledge to reveal the gap that has existed in the leadership analytical framework. In order to meet the ever-growing requirements of a global socio-economy based on knowledge, it is the intent of this dissertation to develop a leadership model to incorporate knowledge into the leadership paradigm.

Technology Implications

Knowledge has gained power and authority as a driving and an organizing force that has led to the dramatic innovation of powerful computers and digital telecommunication technology used to build a world-wide digital network known as the Internet (Richards & Seary, 1997). Negroponte (1995) submits the knowledge contained on the Internet will become so comprehensive and so diversified that it will have a profound impact on the human experience. In turn, the extent of this knowledge will have

significant implications on technology, socio-economy, globalization, organization, workers, and leadership.

As mankind continues to understand the significant and strategic importance of knowledge to technology development, knowledge will continue to gain momentum, as organizations will push to build new technologies to facilitate knowledge creation, dissemination, and utilization across the world. Historically, organizations and institutions were organized and bounded by time and place (Griffin, 2000). Before the turn of the century, people had to travel great distances to physically carry knowledge and written information. Because of the difficulty in physically transporting information across great distances, organizations were bound to operate in local areas. Communication between people was generally conducted face to face. As early communication technologies, such as the telegraph, enabled people to dissertate instantaneously across great distances, organizations found they had discovered the means of solving the problems of time delays and traveling great distances to share knowledge. This new technology literally shrunk time and space in the eyes of organizations (Richards & Seary, 1997).

Today, at the dawn of a new millennium, the establishment of the digital highway, along with computer technology, has dramatically shrunk time and space. This convergence of digital technology and powerful computers has made it possible for people to experience the same event, at the same time, anywhere around the world (Malone & Rockart, 1991). Now, with a simple click of a button, someone can instantaneously assemble individuals who are continents apart to be co-located as digital neighbors, for whom knowledge is shared and utilized real time.

This new digital reality that enables people to become digital neighbors will bring about increasing interdependence between communities, organizations and individuals because of the real-time sharing and creation of knowledge globally to bring about new innovation (Monge & Fulk, 1999; Stohl, 1986). The increase of personal knowledge flowing among individuals will lessen the biases cultures and ethnicities promote. When such a reality reaches a critical mass, we must accept that a profound shift in our perception of reality has taken place (Marwell & Oliver, 1993).

Organizations are fully aware that knowledge flowing through the digital highway and computer technologies between individuals are means to increase productivity and reduce its cost, according to Monge and Fulk (1999). The start up of new companies, mergers, privatization, and deregulations is occurring with ever increasing speed that society and organizations have not fully comprehended. This speed and complexity of change indicates that people are generally not equipped to handle such dynamics of the status quo (Nadler, Shaw, & Walton, 1995). With this relentless change of pace, people will react according to their individual characteristics. Some will simply resist change or examine it and then reject it; others will acknowledge it, but be slow to act upon it; and still others will embrace it as a great opportunity.

As organizations become more dependent on knowledge and digital technology, these systems become the norm and will be accepted by society at large. Therefore, what futurists refer to as the digital/virtual age will in fact become our new reality, and the shift in perspective will ultimately be accepted by society (Marwell & Oliver, 1993; Monge & Fulk, 1999). The challenges and implications of a knowledge-based socio-economy that enable knowledge to travel at lightning speed through current and future

technologies create a problematic gap in the centuries-old leadership paradigm that is still oriented in the labor/task mindset of the industrial revolution. These labor/task methods and mindsets have largely degenerated into results-oriented, output-focused, production systems that rigidly control most organizations today.

Social Implications

The flow of knowledge, facilitated by digital technology, not only loosens the restriction of time and space, but also provides the means by which individuals overcome social biases so that society can become globally transparent and knowledge based (Mitchell, 1995). A transparent globe is defined as people across the globe having real-time/near real-time knowledge of each other. Transparency is the ability to have firsthand and real-time knowledge of people, without the barriers of time and space and the bias of cultural norms. The result of this global transparency will alter the way society, organizations, and people see each other. One only has to turn on CNN and watch developing news reports from halfway around the world to understand the impact of information on our lives.

Boland et al. (1994) submit that knowledge facilitated by technology has transformed society to be knowledge based, and that the transformation will continue across the globe. A knowledge-based globe has significant implications on how societies are organized, both formally and informally, and more importantly, on how society views the relationship of leaders and followers (Chen & Gaines, 1996). In order to explain the transformation of the globe to be socially transparent, the work of Bridges (1991) and Lewin (1936) is referenced to establish a framework for the analysis. It is important to keep in mind that a part of the agenda of this work is to validate conceptually that there is

a paralyzing gap of the leadership paradigm that has been neglected by scholars and parishioners that emerged since society made the transition to be transparent and knowledge based.

Bridges (1991) explains that all transitions (individual, organizational or social) have to go through three mental phases: (a) an ending of the old paradigm, (b) the neutral zone of wandering toward the new paradigm, and (c) the deepening of the new beginning. Lewin (1936) also explains transition as a change process that is broken into three similar phases as explained by Bridges: (a) unfreezing the old ways of doing things, (b) the movement toward the new paradigm, and (c) the refreezing of the new paradigm. Evans and Lindsay (1999), Fry, Hattwick, and Stoner (2000), and Block, Blanchard, Wheatley, and Autry (1996) submit that the social transition toward the knowledge-based global society will follow three similar phases of transition and the change process as described by Bridges and Lewin.

The first phase of the transition toward social transparency is to unfreeze and break the traditional orientation of people and society that has been bound to place, time, and culture, in order to guide the transition toward global transparency. Unfreezing is the process by which traditional relationships (physical) in a local community are broken or loosened.

Traditional engagements of people and organizations have been bound and restricted to location such as local residence, neighbors, employment, and communities, rather than the global landscape (Monge & Contractor, 2003). Naturally, people tend to be more connected to the location of their homes, employment, neighborhoods, and communities and less connected with others in communities in distant lands. The

establishment of the digital highway and sophisticated computer technology has enabled people to establish new connections and relationships around the globe digitally, which loosen the grip of locality. Knowledge that flows through these new connections and relationships across distant lands will drive local communities to make the transition to the global community. Knowledge and information play a central role as driving forces in the social process of establishing a global community.

The second phase of the transition toward the new paradigm of global transparency is that real-time and firsthand knowledge and information gained from people around the globe bring changes and transformation to the local community (Burkhardt & Brass, 1990). As individuals convey knowledge digitally as news, information, and drama about individuals, organizations and societies around the globe, people will become more informed about the world on an individual basis. More importantly, people will experience their lives with knowledge of the larger global context.

The final phase of the transition toward a transparent globe is the refreezing of the new paradigm. The refreezing process will be the deepening of self. Individual characteristics will emerge to provide new forms of personal relations and participation in the global social process (Zeggelink, Stokman, & van de Bunt, 1996). These personal experiences will deepen knowledge about individuals, which will lessen the grip of cultural biases that people harbor about individuals in distant lands. Knowledge of individuals' personal characteristics, patterns of behaviors, and thinking styles will emerge to replace global biases and ignorance. Throughout the next decades, we are likely to see substantial global transformations in the ways people view themselves, in

how they relate to the larger global context, what they will demand, and what they are willing to tolerate (Wellman & Wortley, 1990).

Economic Implications

Due to the fact that knowledge has transitioned societies to be transparent across the globe, economic implications had to follow, according to Monge and Fulk (1999). As individuality deepened globally, individualized patterns of needs, wants, and consumption characteristics emerged on the economic radars of global organizations. Naturally, mega corporations saw new patterns of customer needs, wants and purchasing habits developing globally and market segmentations forming. These new global segmentations inspired business strategies to operate without the limitations and restrictions of cultural norms, traditions, and roles (Granovetter (1985; Van den Bulte & Moenart, 1998). Today, organizations are now relying less on traditional biases, values, and cultures and more on their own knowledge of individuals around the globe. This process, of course, is enabled by the personal knowledge one gains as one meets individuals virtually on the digital medium.

These dramatic experiences will have significant implications on organizations and the work force. Malone and Laubacher (1998) argue that individualization sets forth a new breed of worker who will emerge in the transparent society. Workers will broker their knowledge, talents, and craftsmanship in the global market, and they will have very little loyalty and/or commitment to organizations, national boundaries, and cultural norms, in which they reside and work. Rather, their loyalty will be invested in advancing their knowledge, talent, and craftsmanship. Knowledge workers will highly value the constant state of learning and creation of knowledge for their own self-interest. This

phenomenon creates a new type of work force known as knowledge workers, who replace the laborer and task workers of the industrial era.

Leadership Implications

Knowledge has transformed the workforce globally to demand more personal attention and respect from leaders of organizations (Monge & Contractor, 2003). In response to the requirements of a knowledge-based workforce, organizations are structurally replacing traditional command-and-control hierarchies with flatter structures so that the humanistic elements of organizations, such as people's knowledge and their capability to think, will surface as the core competitive edge of organizations.

The traditional command-and-control way of leading people primarily focuses on power, position and function. The command-and-control structure is typically displayed graphically on an organizational chart. Senge and Carstedt (2001) suggest that, by default, people operate from the mindset that people cannot think for themselves and that their knowledge is not important. However, Drucker and Senge (1998) argue that, because knowledge has driven the economy to be knowledge based, the workforces have responded and educated themselves to meet the requirement. Of course, as people transition from being labor based to being knowledgeable workers, the workforce as a whole demands that its knowledge and capability to think are the workers' greatest and most valuable assets that corporations must appreciate and utilize. Thus, leaders are challenged not only mechanically on how they lead, but also more importantly on a deeper level, on their mindset and beliefs about people.

Today, leaders are forced to replace the old top down approach with an innovative learning system, such as learning communities' approach to meet the demand of the

knowledge worker as a learner and creator of breakthrough knowledge (Drucker & Senge, 1998). Furthermore, leaders are challenged to move away from the instructional approach, which operates from the idea that leaders know best, workers are unintelligent, and knowledge can only be instructed from the leader to the follower. Instead, leaders must rely more on a platform of collaboration that states that everyone (leader and followers) has knowledge to contribute toward the success of the organization (Holman & Devane, 1999). The driving force of knowledge forces leaders to come to grips with the realization that they must create and foster the culture of learning organizations that engages knowledge workers in the co-creation and co-learning of knowledge with leaders to solve problems and seize opportunities, both for workers and organizations alike (Senge, 1990).

In terms of human relations, the entire leader-employee relationship is destined to change (Duffy, Lowyck, & Jonassen, 1992). How knowledge workers are treated, motivated, united, facilitated, evaluated, groomed, and led must undergo dramatic changes (Senge, 1994). Many executives and management experts insist that people are physical repositories of knowledge, and they are a company's single greatest asset (Drucker, 1994). With the increase of knowledge networking across the globe, the 21st century will be a challenging time for researchers and practitioners of the leadership alike. Their mission will be to shift the emphasis from the task/direction orientation of many organizations to the creation of community and the focus of knowledge creation and sharing. This new orientation will allow knowledge workers to co-lead a community of learners globally without the restrictions of time, space, function, and traditional norms (Isaacs, 1993).

Leadership

The previous section has established a conceptual framework of knowledge as a driving force and the implications of knowledge. It included the implications of knowledge on leadership behaviors and beliefs. This section will continue the focus on leadership theory and will provide three deliverables to expand the conceptual framework of the study.

The first objective of this section is to provide a historical overview of the leadership literature and the theories that have defined the current leadership paradigm. The second objective is to illustrate, both from a mechanical and a principle view, that the leadership framework has not evolved or addressed the requirements of the knowledge-based global socio-economy. Third, this section will construct a leadership model that will not only grow the leadership paradigm, but it will also forward the requirements of the knowledge-based global socio-economy. It is the third deliverable of this section that the author believes will be his conceptual contribution to the growth of the leadership paradigm.

Leadership Review of Literature

The earliest studies on leadership primarily focused on personal attributes of leaders. These theories, known as trait theory, argued that leaders are born with innate superior traits that produce superior results from followers. Katz (1949), Mann (1965), and Stogdill (1948) identified a significant correlation between effective leadership and leaders' traits.

During the 1950s and 1960s, Ohio State University and the University of Michigan researchers expanded the leadership paradigm beyond the trait theory (Wren,

1995). The studies concluded that leaders could be characterized by certain behaviors. Leaders' behaviors could be assessed, taught and learned. The University of Michigan and Ohio State University studies focused on two different leadership orientations. A leader was either task or relationship based. The significance of the studies was that leadership traits could be taught and learned and that they were not necessarily inherited.

Griffin (2000) and Northouse (1997) suggest that, in 1964, behavior scientists, such as Robert Blake and Jane Mouton (1985)—furthered by the work of Fred Fiedler (1967) and House (1971)—advanced the study of leadership from a different perspective to embrace the situational factor. These authors argued that not all leadership behaviors and styles are effective in all situations. Hence, leadership behavioral models and styles were developed and prescribed to fit the requirements of a situation. Scholars and practitioners such as Blake and Mouton developed the Managerial Grid Model; House developed the Path to Goal Model; and Fiedler developed the Contingency Model to fit situational requirements. However, one of the limitations of these studies is that they failed to investigate and appreciate the power of followers.

During the 1970s, 1980s, and 1990s, researchers and practitioners, such as Burns (1978), Downton (1973), Bass (1985), and Robbins (1983), made a significant shift from studying leaders to studying followers. In these studies, it was concluded that followers have their own interests, dreams, and challenges that often override leaders' and organizations' goals. Hence, the logical conclusion was to merge both the interests of followers with the interests of organizations. The two leadership theories that evolved from these studies are know as transactional and transformational leadership.

Bass (1985) and Robbins (1983) describe transactional style as a method by which leaders set up rewards to be gained by followers in exchange for their labor. Burns (1978) and Downton (1973) describe the transformational style as a method by which a leader can elevate followers to pursue extraordinary efforts that transcends followers' self-interest for the good of the organization. Downton polarizes transformational style and transactional style into two different conceptual camps. However, Burns argues that the two styles belong on the same continuum. Transactional leadership has to do with the physical and mechanical element of leadership, while transformational leadership deals with the spiritual and intellectual side of leadership.

Transactional Leadership

Transactional leadership theory is centered on the belief that the most significant asset of an organization is the labor of the workforce (Bass, 1985; Burns, 1978). With transactional leadership, rewards are set up to motivate workers to perform their work and to comply with a system's requirements. Hence, leaders' and followers' relationships are contingent upon a series of exchanges in which rewards and tasks are exchanged. Other leadership models were developed as various versions of the transactional theory, such as Path to the Goal Leadership Model, the Contingency Model, and the Leadership Exchange Model.

The effectiveness of cost-benefit exchanges between leaders and constituents can increase clarity of performance criteria (Yukl, 1989). Furthermore, structured rewards depict consistency and reliability that allow constituents to be involved in determining standards for performance. Finally, leaders can contribute to the relationships by giving

feedback on whether the individual and/or team is/are meeting intended objectives or goals.

Transformational Leadership

Burns (1978) and Downton (1973) describe the transformational style as a method by which a leader can elevate followers to pursue extraordinary efforts that transcends followers' self-interest for the good of the organization. Bass and Avolio (1990) conceptualize transformational leadership into four conceptual constructs: Idealize influence, Inspirational motivation, Intellectual stimulation, and Individualized consideration.

1. Idealized influence: followers trust and identify with operating principles of the leader. More importantly, followers, beyond logic, are emotionally identified with the leader;

2. Inspirational motivation: followers are provided with symbols that are emotionally appealing for organizational goal achievement;

3. Intellectual stimulation: followers are encouraged to question their own way of doing things, ideologies, and thinking styles; and

4. Individualized consideration: leaders are genuinely interested in developing followers.

Idealized Influence is a common attribute and theme found in transformational leadership. It is the leader's ability to motivate subordinates by focusing on the higher order. Higher order can be defined as operating principles, vision, purpose, and values (Yukl, 1989). Bennis and Nanus (1985) define higher order in two ways: (a) create and articulate a shared vision, empowering constituents to act toward a common goal; and (b)

attend to the concerns and developmental needs of constituents. These transformational attributes can help to facilitate the co-learning and co-creation of knowledge and can assist leaders in creating a vision, mission and goals. Constituents' knowledge can transform a vision to be a shared vision, a mission to be a shared mission or a goal to be a common goal. More importantly, when experts come together and form a cross-functional/expertise team, their knowledge and capability to think individually and collectively can create the road map on how to achieve a vision, mission and goals of an organization.

Inspirational Motivation is the leader's ability to articulate an appealing vision of the future, challenge followers with high operating principles, and optimistically provide inspiration and encouragement (Bass, 1989). Tichy and Devanna (1986) add that a leader's vision must be ethical and moral in order to operate on the emotional and spiritual resources of organizations. Although a team may create a shared vision, mission and goals, if people cannot be motivated or inspired to achieve such a vision, it lessens the chance for success. Although the knowledge and the capability of the team to co-learn and co-create knowledge is a key success factor, it takes good relationships to provide people with positive feelings to be motivated and inspired to give knowledge and accept others' knowledge. In a team environment, a team member can develop either a sense of closeness or competitiveness. On the other hand, team members can experience acceptance, openness, respect and progress when in a team environment. A feeling of closedness and competitiveness can shut down creativity, while feelings of openness and respect can unleash creativity energy. Transformational leadership attributes certainly

impact a team's motivation and inspiration and, therefore, its ability to co-learn and co-create knowledge.

Intellectual Stimulation occurs when transformational leaders stimulate the intellects of constituents and when leaders encourage constituents to question old assumptions, traditions, and beliefs (Bass, 1989). Such processes stimulate new perspectives that generate new knowledge. Quinn and Hall (1983) recommend methods that stimulate intellect: rational, informal, empirical, and ideological.

Through the use of logic and reason, leaders and constituents alike can stimulate a team's intellect to produce knowledge that can solve a communal/group problem. Through awareness, constituents will feel free to generate various forms of knowledge to solve a common problem. Empirically, leaders can facilitate constituents to co-analyze information. Ideologically, leaders can foster a stimulating environment that encourages open thinking and intuition to generate ideas. Transformational Leadership attributes assist leaders and constituents to co-learn and co-create knowledge and new ideas.

Leadership Paradigm Gap

The literature review with regard to the leadership paradigm in the first part of this section depicted that the study of leadership in the past has primarily focused on studying leadership traits, behaviors, situations, and transactional and transformational characteristics. The literature revealed that the leadership paradigm is rooted on the bases of power, formal authority, position, transactional, labor/task, and uni-dimensionality. Hence, although the leadership paradigm has incrementally evolved over the last century to reflecte different behaviors and styles, the basis for the leadership paradigm has largely maintained the status quo.

The bases of the leadership paradigm were inspired and supported by the mindset and belief of the industrial revolution (Northouse, 1997). The beliefs of the industrial revolution were that people are unreliable, emotional, lazy and dumb. The solution of the industrial revolution to this humanistic problem was to create a machine that could take the place of human beings. Management systems and leadership characteristics were centered around and designed to accommodate people's support of a mass production system. Therefore, processes are aligned to the mass production system; in turn, positions are created out of processes; tasks are created to detail out positions; incentives are given for every task that is performed. Human beings' contributions and energies in a mass production system are therefore focused on keeping the machine working and productive. Management in mass production systems was led to believe that, if people thinking and using their brains would lead to reduced focus on keeping the machine working, the result was higher operating costs. Training programs for employees of the industrial revolution era centered around the same orientation; people should only be instructed and taught what the machine required from the labor of the workforce. Collaboration among employees was not acceptable during the industrial era.

In order to see the impact of the industrial revolution on the leadership paradigm, it is important to draw parallels between the two schools of thought. For over a century, leadership theorists and practitioners in various periods have developed leadership models to support the view of leadership that there can only be one leader on a sports team, and he/she takes the lead and everyone follows. It is this model that most people have grown to accept. This view, however, limits the possibilities of the powerful construct of leadership to incremental changes. The conviction that leaders have a natural

born gift with superior intelligence somehow evolved into the belief that the rest of society (the followers/workforce) who were thought of as the "non-thinkers" should only do what they were told by leaders.

As leaders engrained their belief system with this view, leaders were looked upon as task doers or taskmasters. As task masters, leaders built elaborate and bureaucratic mechanical processes to give directions to followers to guide their labor. This leadership trait was the method by which leaders could economize the production scale of people's labor. Leaders believed that their relationship with their followers was the method to motivate followers to maximize their labor.

People have strong predispositions toward compliance to power, because they have been acculturated to learn and experience leadership in a linear, uni-dimensional and mechanical way. Hence, employees go to work with this strong predetermination about what leadership is about. Senge (1994) submits that the heart of this traditional view is that leadership is based on the assumption that people are powerless, and only great leaders can remedy their powerlessness. This mechanical view of leadership assumes that workers lack personal vision, interest, talents and day-to-day challenges. Hence, employees are treated as interchangeable slots in the production process to industrialize an economy of scale (Ansoff, 1990).

However, since the social economy has made the transition to the knowledge-based economy, workers within organizations are educating themselves to be equipped with knowledge and at the same time expanding their capability to think and enjoy the benefits of the knowledge-based socio-economy. As the workforce becomes knowledge based, they are beginning to shed the old industrial leadership paradigm that is still based

on labor, task, power and uni-dimensionality. The gap is widening between the demand

of the knowledge-based workforce and the current paradigm of the leadership framework.

The gap is threatening the survival and the applicability of the leadership paradigm in

today's knowledge-based global socio-economy.

Knowledge Ecology

Synergistic Leadership has been proposed and defined as the leadership model

that can transform the leadership paradigm to meet the requirements of the knowledge-

based global socio-economy. The purpose of this section will be to review the literature

on knowledge ecology, both on an individual and a social level from an adult learner

perspective. In this way, followers of leadership theory can understand how to lead a

workforce in a knowledge-based global socio-economy. Understanding how adults learn,

construct and apply knowledge individually and collectively is a key requirement to be a

successful leader in the knowledge-based economy. This review of literature on

knowledge ecology will complete the conceptual framework of the study.

Adult Learner as Knowledge Worker

The knowledge-based globe necessitates that leadership effectiveness be

measured on the ability to re-construct knowledge and the intellectual property embedded

in knowledge workers, both from an individual and a community level (Senge &

Carstedt, 2001). Knowles et al. (1998) describe knowledge workers as adult learners who

are living knowledge repositories and who render their knowledge not to an assigned

leader, but to a community of other knowledge workers to create mutual benefits.

Knowles et al. (1998) also depict knowledge workers as adult learners who are

leaders of their own world and want to transform their personal objectives to be aligned

with other strong strategic adult learners to acquire, create, apply, share, and disseminate knowledge for mutual benefits. According to Lambert, Collay, Dietz, Kent, and Richert (1996), knowledge workers highly value lifelong and continual learning in order to expand their most valuable assets: the ability to learn and create knowledge. Hence, knowledge workers are adult and professional learners.

Adult learners are creators of knowledge who have distinguished characteristics that differentiate them from nonworking and pre-adult learners (Cross, 1981; Knowles et al., 1998). Adult learners are autonomous, self-governing, reflective, and tolerant of contradiction and ambiguity. Knowles et al. (1998) further argue that adult learners attempt to connect learning experiences that generate new knowledge for their own context, which is defined by their existing knowledge base. As the world makes the transition to a knowledge-based globe, adult learners are more likely to have a clearer sense of purpose and be highly motivated to learn; hence, they gravitate toward opportunities for learning experiences.

Conceptual Framework for Adult Learning

One of the most widely applied theories of adult learning is the andragogical theory by Knowles (1980; 1984; Knowles et al., 1998). This section will discuss andragogical and adult learning characteristic theories in an attempt to clarify their alignment with knowledge workers as adult learners.

Andragogy. Knowles et al. has become inextricably linked to the theory of andragogy. Knowles submitted five crucial assumptions that form the conceptual framework for andragogical theory: self-concept, experience, readiness to learn, orientation to learn, and motivation to learn (Knowles et al., 1998).

Knowles et al. (1998) describe self-concept as a person who matures and moves from being a dependent personality toward being a self-directed human being. This assumption about adult learners is consistent with the assumption of the synergistic leadership theory that a knowledge worker requires the opportunity to lead his/her own life and more importantly, he/she is given the opportunity to co-lead in a team, group or department. Further, because of this assumption about adult learners, this study seeks to understand what leadership attribute is required to motivate and inspire constituents to learn and construct knowledge with one another.

The second assumption of andragogy is experience. As a person matures, he/she accumulates a growing repository of experience-based knowledge that, in turn, increases his/her mental faculty to learn more efficiently and effectively (Knowles et al., 1998). As workers grow older, experience increases workers' intellect to be more efficient and effective. This experience level, in turn, can be used to bring about innovative knowledge to produce new products or services for organizations. Leaders must recognize the potential of knowledge that employees have and work to capitalize intellectual capital. This gathering of knowledge, identified as knowledge re-generation, from employees will in turn bring about a new generation of new products and services for the organization.

The third assumption of andragogy is the adult learner's readiness to learn. As a person matures, his/her professional life and other social roles orient him/her to be ready to learn and to seek out opportunities to create knowledge for his/her own benefit. This is known as adult readiness. This assumption is aligned to the belief of the study that constituents are ready to learn and create knowledge together with other constituents.

The fourth assumption of andragogy is that, as an adult learner matures, he/she demands real-time application of knowledge and problem-centered learning experiences that address his/her real-life challenges to achieving his/her dream. This orientation of adult learners is why leaders must understand that the best place for constituents to learn and create knowledge is at the workplace where knowledge is applied through constituents' daily work challenges.

The fifth assumption of androgogy is that, as an adult learner matures, he/she is increasingly motivated to learn to better his/her life. This assumption is aligned to the belief of the study that knowledge workers are self motivated to better their lives through developing their intelligence and their knowledge base, and that they look for leaders to assist in their development.

These assumptions have important implications and applications for leadership in a knowledge-based globe that deal with a workforce that can be conceptualized as adult learners in a learning community. These assumptions can be used to form instruction and facilitating strategies to create an effective adult learning experience. Adults bring to a learning community rich, accumulated life experiences that can serve as learning resources (Knowles, 1980). Since knowledge is both learned and constructed from prior experience, adults learn more effectively through experiential techniques, such as dialog, collective problem solving, and scaffolding (Pratt, 1988). Leadership in a learning community can utilize these techniques to encourage the knowledge workers/adult learners to make use of real personal issues, their prior experience, and their self-interest in the construction of knowledge (Pratt, 1993).

Although andragogy laid the foundation for our understanding of adult learners/knowledge workers, the theory left the social domain of the adult learner unexplained. Hobson and Welbourne (1998) submit that reciprocal relationships that exist among adult learners' experiential knowledge, social norms (culture), and the situational context are interdependent in learning and constructing knowledge. The Characteristics of Adults as Learners model is an attempt to integrate social context and experiential learning into the adult learning theory.

Adult learning characteristics theory. The characteristics of knowledge workers as adult learners are based upon the differences in physical, psychological, and socio-cultural characteristics of learners (Knowles et al., 1998; Valsiner, 1993). There are four basic tenets from the three lenses previously mentioned that characterize adult learners in a team or social environment.

First, adult leaders' or knowledge workers' participation in a learning experience is motivated by both positive and negative factors. Hence, the styles, characters and behaviors of leaders in a team can positively or negatively influence knowledge workers to learn and create knowledge with constituents.

Second, knowledge workers' participation in a learning experience can be correlated with anticipated learning outcomes. When team members get together to learn and create knowledge, knowledge workers will participate or not, based on their anticipation of what knowledge they can gain from others. Thus, the attributes of a leader can dictate the learning environment. If the leader creates a negative environment, team members will most likely compete with their knowledge, or whereas an open and creative environment will tend to synergize team member knowledge.

Third, knowledge workers have a strong sense of self-security that supersedes the need for achievement. Leaders' attributes that provide a secure environment will more likely foster an environment where constituents are able to learn and create knowledge together. On the other hand, a leader can drive a team norm in which constituents feel unsafe, the result being that knowledge will not be shared freely.

Finally, adult learners or knowledge workers require a clear expectation of rewards. This will affect their motivation to share their personal knowledge. A leader must be sensitive and attuned to a reward system that will motivate both individuals and team members to learn and create knowledge. This will help to synergize the team's collective performance.

Implicit in this model is the idea that situations, contexts and personal characteristics of those involved in a learning experience are influenced by both (a) the knowledge that is learned and constructed, and (b) the method by which the knowledge is best learned and constructed. Knowles et al. (1998) submit that adult learners have crystallized knowledge and intelligence; thus, adults learn best when the process of learning and construction of knowledge is based on experience, problems, and appropriateness.

The andragogical and Adult Learning Characteristic theories reveal common challenges and opportunities. First, the theories emphasize the importance of problem-based learning and construction of knowledge. Adult learners want and demand to learn and construct knowledge that will solve a real problem for them. Second, adult learners are self-directed. This implies that adults know what they want in life and the challenges they face block their destination and, thus, they seek out learning experiences that bring

value to what they want. Third, adult learners do not learn knowledge passively; they construct knowledge. Finally, adult learners are social, and, thus, they enjoy co-learning and co-creating knowledge for their mutual benefit.

Adult Learner and Constructivist Learning

The major principle of the constructivist theory, as applied to adult learners or knowledge workers, is that knowledge is actively created rather than passively learned (Davis & Mason, 1989; von Glasersfeld, 1984). This view depicts adult learners as leaders in their own world with goals in life and personal challenges, and, thus, they learn and construct new knowledge individually and as a group to solve their challenges and, more importantly, realize their dreams (Knowles et al., 1998). Construction of knowledge is based on adults' prior knowledge, beliefs, values, experience, and self-interest.

Much of learning and teaching theories is based on instructionist and behaviorist approaches. The instructionist approach assumes that leaders have a knowledge reservoir that contains all knowledge necessary to be successful and, thus, should instruct the follower (adult learner), who has little or no knowledge on a particular subject (Lambert et al., 1996). This approach assumes that adult learners, as knowledge workers, enter a learning experience as individuals without knowledge, dreams, direction, interests, or challenges of their own (Brooks & Brooks, 1993).

The behaviorists place learning under a microscope in an attempt to reduce knowledge into deduced and segregated variables, and attach motivational stimulants in a linear fashion to instruct learners. This approach attempts to stimulate ideal behaviors. Constructivist-based learning, on the other hand, shifts the paradigm to reveal the broader and connected view of learning, which is the inter-connectedness of variables in multi-

levels and multi-dimensions that applies to the interest and challenges of the adult learner (Bruffee, 1993).

Constructivism is not an objectivist theory that assumes reality as external to the learner and in which the mind acts as an intake processor of knowledge of that reality (Cooper, 1993). Cooper draws connections between the construction of knowledge and both behavior and cognition. Constructivists see knowledge as defined by the beliefs, values, and self-interest of the knower. Behaviorists contend that external stimulation is what determines learning, while the internal cognition is a passive processor. Similar to the behaviorists, the cognitivists see the internal processing as the only important process to the extent that it explains how external reality is processed and understood. Constructivists acknowledge the role of each theory with a shift in paradigm. They also view people as leaders of their own vision and desire who have to deal with challenges of the social realm. Cognition (learning) is the result of mental construction. Thus, when great minds of adult learners collaborate, it becomes a socially mediated process in which the minds create synergy to form a social cognition to co-process and co-construct knowledge for mutual benefit (Jonassen, Davidson, Collins, Campbell, & Haag, 1995).

In the constructivist view, knowledge is not transmitted from the formal leader to the learners; rather, the leader is also considered a learner with an added role to facilitate the co-creation of knowledge in a learning community (Lambert, 1998). The learner, thus, has a dual responsibility to construct meaning from experiences and to justify that meaning to others in the learning community. From a social constructivist standpoint, then, conceptual understanding is formed through interaction with the physical, social, and cultural environment (Janov, 1995).

Adult Needs and Constructivism

Adults have a rich repository of knowledge from which they draw. How successful learning experiences are depends upon how well the learner can integrate new knowledge into his/her existing schema and amend prior misconceptions about the reality at hand (Gergen, 1994). Knowles et al., (1998) argue and submit that, for optimal learning to occur, three learning needs of adults must be met:

1. Adults need to know how the learning experience will advance their life.

2. They need to have ownership of what they learn through their experiences and beliefs, and, thus, learning has to connect to the learner's context.

3. They learn only when they want to, so the best motivation is to motivate them internally to do so.

Constructivist learning environments are dependent on the leader's attributes in leading a team. These attributes can meet basic andragogical needs by emphasizing learning and construction of knowledge over teaching and instruction of knowledge. This can be accomplished by encouraging learners to engage in peer dialogue, supporting collaborative learning while encouraging learner autonomy, emphasizing the context in which learning occurs, and anchoring learning to real-world, authentic tasks, so as to link to learners' prior experiences (Isaacs, 1993).

According to Jonassen et al. (1995), learning experiences need to anchor learning to relevant challenges to help learners develop learning strategies through scaffolding. Scaffolding is a strategy by which support is provided to help the learner accomplish a task that the learner would be unable to achieve on his/her own. Support is gradually removed as the learner takes more responsibility for his/her own learning (Duffy et al.,

1992). The goal of scaffolding is to help a learner go beyond the zone of proximal development (Duffy et al., 1992), which is defined as the gap between what a learner can do on his/her own and what he/she can accomplish with assistance. In the case of scaffolding, the role of a leader in a team is to assist knowledge workers as learners and constructivists of knowledge and to facilitate the team's learning endeavors to a point where the leader's facilitation is no longer needed.

Adult needs can be met through a constructivist learning framework. Constructivist learning is experientially based: Adults have a rich source of life experiences that should serve as the basis of learning (Knowles, 1980). Constructivist learning environments should be anchored in authentic goals and challenges for the learner. Adult learners want learning to be purposeful, practical, relevant, and immediately applicable to their challenges and self-interest. Constructivist learning environments should use contextualized problem-based learning, because adult learners are more problem-centered than content-centered. Adult learners have two additional characteristics that drive the need for constructivist learning environments: Adults tend to be self-directed learners with a relatively high need for autonomy over the learning process; adults require more flexibility in their education because of career, family, and personal constraints.

Adult Learners' Needs and Situated Learning

Situated learning emphasizes the role of context in learning (Merriam & Caffarella, 1991). In traditional adult education, experience is important to produce motivation for learning, and as a learning resource (Knowles, 1980). In a situated paradigm, the experience becomes the activity and takes on a dynamic role in learning.

This view also argues that adults learn better not from experience but by the actual experience.

According to situated learning theory, knowledge is subjective and contextual relative to the activity. Context affects not only what information is processed, but also how it is processed. Learning is seen as a socially mediated process by which communities of practitioners socially negotiate the meaning and construct knowledge (Jonassen et al., 1995). Since knowledge is embedded in experience and personally constructed, instruction must situate learning in real-time, real-world contexts that involve collaboration and social interaction.

Summary

Through the use of Schmieder-Ramirez's (2002) SPEL diagnostic model, knowledge was defined as a driving force. Four implications and consequences were identified: (a) technology changes, (b) socio-economic changes, (c) workforce changes, and (d) leadership changes. The advent of digital technology has allowed people to share knowledge real-time. Due to technologies such as the Internet, individuals from several continents are able to co-create knowledge. Leadership has to transition the leadership paradigm in order to deal with the knowledge-based workforce of the 21st century effectively.

The literature revealed that the earliest studies on leadership during the industrial revolution were focused on the personal attributes of leaders—the trait theory. Ohio State University and the University of Michigan (Wren, 1995) furthered the advancement of the leadership paradigm and argued that, contrary to the trait theorists, who believed that leaders were born, leaders have styles of leadership that can be learned. Two orientations

were depicted from the university's studies: task and relationship. Behavior scientists added to the leadership paradigm the situational factor and argued that different situations demand different leadership behaviors. During the 1970s, 1980s and 1990s, researchers and practitioners realized that, in order to be an effective leader, a leader must have an in-depth knowledge of followers. Studies revealed that the self-interest, dreams, and challenges of followers are critical driving forces that must be embraced by the study of leadership. Two models came out of these studies: transformational and transactional leadership. The transformational style of leadership is a style by which a leader can elevate followers to pursue extraordinary efforts that transcends followers' self-interest for the good of the organization. The transactional style of leadership is a style by which leaders set up rewards to be gained by followers in exchange for their labor.

The literature revealed a threatening gap in the leadership paradigm. For more than a century, the literature has shown that leadership studies were influenced and inspired by the industrial revolution movement of the 1900s, which operated from the paradigm of converting everything into a machine to produce economies of scale (Northouse, 1997). Likewise, leadership was perceived as a mechanism of converting humans into machines by organizing the labor of the workforce into mechanical tasks and functions. This labor/task/mechanical leadership paradigm has lasted to date. Similarly, organizational structure defined leadership as a position and/or function of a machine that demanded an approach of command and control, top-down and instruction oriented. However, since the economy has made the transition to a knowledge-based economy, the century-old industrial leadership paradigm emerges as a threatening gap to the strategic viability of leadership. The literature revealed that, if the leadership paradigm were to

remain as a viable core of business success, then the mindset that will create the new leadership paradigm must seek the change it attempts to experience (Northouse, 1997).

The adult learning theory operationally defined the knowledge worker as an adult learner. Adult learners are leaders of their own, and thus seek out opportunities to co-learn and co-create with other leaders knowledge for synergistic benefit. The constructivist theory argued that knowledge is not passively learned; rather, it is actively constructed.

Synergistic leadership is defined as the new leadership paradigm that can bridge the gap between leadership theories based on a mass production model and a leadership theory based on knowledge. This leadership paradigm is founded on five major concepts: talents, intelligence, knowledge, co-leadership and synergy. Four major transitions will be required to in order to form the new mindset that will transform the leadership paradigm: a) from skills to talents; b) from labor to knowledge and intelligence; c) from position and individual leadership to emergent and co-leadership; and c) from developing products and services to developing and synergizing individuals as a community.

Chapter 3

Research Design

The purpose of this research project is to investigate, through the actual and ideal perception of constituents, to what extent transformational leadership attributes encourage co-learning and co-creating knowledge with other team members. Effective leadership is a leader's ability to influence and encourage constituents, through non-formal authority, to come together and co-learn and co-create knowledge for synergistic performance. The results of this study will assist leaders and organizations in focusing on knowledge as a critical driving force and deliverable in the knowledge-based global economy.

This chapter begins with the purpose of the study and the research questions. The following will be a brief description of the research design, the participants of the study, the human subject consideration, the data collection procedures, the instrument, and the data analysis. Specifically, this study seek to answer the following research questions:

1. To what extent do "actual" leadership attributes as perceived by team members encourage them to co-learn and co-create knowledge?

2. To what extent do ideal leadership attributes as perceived by team members encourage them to co-learn and co-create knowledge?

3. What are the differences between "actual" and "ideal" leadership attributes as perceived by constituents that encouraged them to co-learn and co-create knowledge with other constituents?

4. What order of importance do "actual" leadership attributes take as perceived by constituents in encouraging them to co-learn and co-create knowledge?

5. What order of importance do "ideal" leadership attributes take as perceived by constituents in encouraging them to co-learn and co-create knowledge?

6. What are the relationships between "actual" and "ideal" leadership attributes as perceived by constituents that encourage them to co-learn and co-create knowledge with other constituents?

Instrument Design

This study was a descriptive, non-experimental, quantitative research design undertaken to investigate the extent to which constituents' perception of transformational leadership attributes encouraged the co-creation and co-learning of knowledge among team members. This study involved descriptive statistical measures that described the relationships among variables. The selected research process was specifically chosen to answer the research questions and is alleged by the researcher to be an appropriate methodology. The design has successfully obtained the desired information and has answered and validated assumptions about each research question. The study is quantitative in nature, and it utilized appropriate statistical procedures to analyze the data derived from the survey.

The researcher collected demographic data that were used to identify variations among the constituents' perceptions of their team leaders. The demographic data collected from the constituents were (a) age, (b) gender, and (c) educational level. However, it should be noted that the research design did not have any intention of conducting a casual or comparative analysis. Thus, there was not any attempt made to determine cause and effect relationships between variables.

Participants

The data were collected from participants of teams in a Fortune 50 company. The data were then analyzed and summarized for the purpose of this study. There were five teams that participated in the survey. Each team contained 5 to 11 individuals. These teams were matrix oriented, which was operationally defined as both functional and project based. Team members consisted of system, electrical and aeronautical engineers, information system analysts, and production specialists. Each team had one formal team leader, and the constituents for each team were asked to evaluate their team's formal leader through their perceptions of actual and ideal transformational leadership attributes that encouraged them to co-learn and co-create knowledge with other team members.

The teams that were selected for the survey worked on projects that were classified as high priority and significant to the overall performance of the organization. These teams were cross-functional, both in disciplines and in background. Each team had representatives from specialty functions in the organization to assure there were cross-functional capabilities in each team. There were at least four functional specialists in each team. These functional specialists provided cross-functional lenses that comprehensively diagnosed issues and problems, and provided cross-disciplinary solutions that enhanced the overall performance of the organization.

Team members were highly knowledgeable workers, and a majority of team members were veterans of their respective fields. A majority of the participants had worked for over a decade in their industry. Hence, members of these teams represented workers who were knowledge workers, cross-functional and experienced.

Human Subjects Consideration

All survey responses were treated anonymously for confidentiality purposes to protect the identity of the participants and organizations. The responses of participants were designated strictly and only for the purposes of the study, which was outlined in the introduction letter. To protect the identities of the participants, the researcher utilized a number system to identify each team member to their respective teams. Participants were specifically asked not to put their names or the identity of the organization in which they work on the responses. The purpose of the coding system was threefold: (a) to protect the identity of the participants, (b) to protect the identity of the organization, and (c) to help the researcher track the responses to their respective team. Neither the company names nor the participants' names were included in any of the data collected or manuscript. As an additional precaution, scores and demographic information were analyzed and reported as aggregate scores to protect the identity of participants and the organization.

Each participant was informed that there was no risk associated with his/her participation in the study, and that no form of payment would be rendered for their participation. All participants were informed that if, after reading the consent information, they decided to complete the survey, they understood that their participation was voluntary and they had the right to discontinue participation at any time. All participants were informed that they had the right to refuse to answer any particular question. The privacy of the participants and the organization was maintained throughout the study, and it will continue to be maintained in all forms of communication, both published and oral. The participants were informed that, by completing and submitting the survey, they implied consent to participate in this study.

Data Collection Procedure

The data collection procedure was hand delivered to participants in an envelope, which included a cover letter and the survey instrument with instructions on how to fill out the questionnaire. The researcher chose two individuals who assisted in the distribution and collection of the survey. Participants were allowed an hour to fill out the questionnaire. Participants were asked to hand deliver the responses back to the individual who provided them with the survey within an hour. The two assistants allowed an hour before they checked each response to be sure that each participant had turned in the survey. The two assistants walked around and picked up the missing responses from participants and checked the surveys for completeness. The researcher's phone number and e-mail address were provided to the two individuals who distributed and collected the survey, in case participants needed assistance on any issues while filling out the questionnaire.

Participants were instructed to complete the questionnaire on their own, without contacting other participants. Also, participants were asked to complete the survey where they normally do their work. Participants were further instructed that the survey would take approximately 20 minutes to complete.

Upon receipt of the data from the two assistants, the researcher conducted a second check of all responses for completeness to make certain that the critical information was entered. All responses had number codes that reflected the team of their origin. Responses then were grouped according to team and entered into an Excel spreadsheet. Once all of the responses were collected, grouped and entered, the researcher wrote a letter of appreciation to all of the participants. The two research

assistants distributed the letters to the participants. The data were analyzed statistically and were included as part of the researcher's dissertation.

Instrumentation. A questionnaire was developed to measure the transformational leadership attributes of leaders through the perceptions of constituents. The questionnaire was a 35-item, five-point Likert-type scale. The questionnaire was utilized to evaluate how frequently, or to what extent, constituents perceived actual and ideal transformational leadership attributes of their leader that encouraged them to co-learn and co-create knowledge with other team members. The questionnaire consisted of three demographic questions, 16 questions about "actual" transformational leadership attributes, and 16 similar questions about "ideal" transformational leadership attributes. The three demographic questions captured the age, gender and educational level of participants. The actual and ideal questions about leadership attributes were centered on the following four transformational attributes:

1.   Idealized influence

2.   Inspirational motivation

3.   Intellectual stimulation

4.   Individualized consideration

Using the questionnaire, respondents were asked, based on their perception, to answer to what extent the leader of their team demonstrated transformational leadership attributes that encouraged them (the constituents) to co-learn and co-create knowledge with other team members. Respondents were asked to answer the same questions through their perception, but with respect to the ideal attributes (not the actual) of the leader in their team using a five-item Likert rating scale from "Never" (1), "To a small extent" (2),

"To a moderate extent" (3), "To a great extent" (4), to "To a very great extent" (5). The four transformational leadership attributes were based on Bass (1985) and Bass and Avolio (1990). The Transformational Leadership questionnaire (TLQ-LGV) survey, developed by Alimo-Metcalfe and Alban-Metcalfe (1999), guided the creation of the items in the survey.

Validity of Survey

The validity of an instrument is its ability to convey persuasively the theoretical variables in the researcher's study to participants, so that the questions make sense and seem aligned to the subject at hand (Lambert, 1998). This study utilized face validity to validate the instrument. Because the study assessed the perception of participants, a subjective evaluation necessitated face validity to validate the designed instrument. This methodology of validation is submitted by Creswell (1994) as a common assessment of validity, which determines whether, on the basis of subjective evaluation, the instrument appears to be measuring what it was set out to measure. Creswell further submits that content validity determines if the survey items are representative of the topic being measured.

A panel of four experts assessed the content validity of the survey and provided the researcher with suggestions for modification. With respect to face validity of the survey, the panel also made suggestions. The survey was reconstructed to reflect the recommendations of the panel. The panel then did agree that the instrument was aligned to measure what it was set out to measure.

Data Analysis

This was a quantitative research study that used descriptive statistics to investigate the perceptions of constituents, as to what extent actual and ideal transformational leadership attributes encouraged them to co-learn and co-create knowledge with other team members. The researcher also used statistical tools (means, standard deviations, frequencies distribution, percentages, and the Pearson Correlation of Coefficient) to analyze the general demographic characteristics of the sample, including age, gender, educational level, and the perceptions of constituents with regard to the four transformational leadership attributes.

Statistics are methods of organizing and analyzing quantitative data (McMillan & Schumacher, 1997). Statistical methods are mathematical formulas that are formulated as tools to help researchers analyze and interpret the meanings behind variables and the relationships between variables. This research project utilized descriptive statistical tools to translate the raw data collected from the survey in order to capture answers needed to address the research questions of the study.

The study utilized the Pearson Correlation Coefficient, which measured the strength of the linear relationship between two variables (Table 2).

Table 2

Research Questions and Statistical Analysis

Research Questions	Item # on Questionnaire	Statistical Methods: Descriptive
1. To what extent do actual transformational leadership attributes as perceived by team members encourage them to co-learn and co-create knowledge?	Actual Section: 1-16	Mean & Std. Dev.

(table continues)

Research Questions	Item # on Questionnaire	Statistical Methods: Descriptive
2. To what extent do ideal transformational leadership attributes as perceived by team members encourage them to co-learn and co-create knowledge?	Ideal Section 1-16	Mean & Std. Dev.
3. What are the differences between actual and ideal transformational leadership attributes as perceived by constituents that encouraged them to co-learn and co-create knowledge with other constituents?	Actual & Ideal Section: 1-16	Differences Between Mean & Std. Dev.
4. What order of importance do actual transformational leadership attributes take as perceived by constituents in encouraging them to co-learn and co-create knowledge?	Actual 1-16	Rank Mean & Std. Dev.
5. What order of importance do ideal transformational leadership attributes take as perceived by constituents in encouraging them to co-learn and co-create knowledge?	Ideal 1-16	Rank Mean & Std. Dev
6. What are the relationships between actual and ideal transformational leadership attributes as perceived by constituents that encouraged them to co-learn and co-create knowledge with other constituents?	Actual & Ideal 1-16	Pearson Correlation Coefficient

Summary

This study was a descriptive, non-experimental, quantitative research design undertaken to investigate the extent to which constituents' perception of transformational attributes of leadership characteristics fosters co-creation and co-learning of knowledge among team members. The study involved statistical measures that described the

relationships among variables. The research process was selected specifically to obtain the desired information to validate assumptions and answer the research questions. The study was quantitative in nature and utilized appropriate statistical procedures to analyze the data derived from the survey.

The data were collected from a population of teams of a Fortune 50 company. There were five teams that were surveyed. Each team contained 5 to 11 individuals. These teams were both functional and project based. Team members consisted of system, electrical and aeronautic engineers, information system analysts, and production specialists. Each of these teams had a formal leader, and the constituents were asked to evaluate based on their perceptions of the actual and ideal transformational leadership attributes.

All survey responses were treated unanimously for confidentiality purposes. Responses were designated strictly for the research purposes as outlined in the introduction letter, survey instructions, and informed consent form. The survey was coded to protect the anonymity of respondents. The coding system was tracked for research use only. Neither the company name nor the individual's name was included in the data used for analysis. Scores and demographic information were analyzed and reported as aggregate scores to protect individual identities.

The data collection procedure asked participants to fill out the questionnaire on their own without contacting other participants. Participants took about 20 minutes to fill out the questionnaire. The data were analyzed statistically and included as part of the researcher's dissertation.

A debriefing session about the research was made available at the conclusion of the study in the form of group meetings or follow-up calls and memos. The researcher and the company's representative were available, upon request, for individual debriefing through the duration of the study.

A panel of four experts assessed the content validity of the survey and provided suggestions for modification. The survey was reconstructed to reflect the changes of the panel, and they agreed that the instrument was aligned to measure what it was set out to measure.

Chapter 4

Research Findings

Data Analysis

Descriptive analysis was used to analyze the general demographic characteristics of the sample, including age, gender, and educational level. The five research questions were analyzed utilizing means, standard deviations, and the Pearson Correlation Coefficient to analyze the extent to which constituents' perception of actual and ideal transformational leadership attributes of their formal leader encouraged them to co-learn and co-create knowledge with other team members.

Each respondent was informed, in the consent portion of the survey, that there were no risks associated with their participation in this study, and the respondent would not receive payment for their participation. All participants were informed that if, after reading the consent information, they decided to complete the survey, they understood that their participation was voluntary and they have the right to discontinue participation at any time. Each participant had the right to refuse to answer any and all questions. The privacy of the participant will be maintained in all published and written data from this study. The participants were informed that, by completing and submitting the survey, they implied consent to participate in this study.

Statistical Procedures

This study investigated five research questions with three independent variables and eight dependent variables. The independent variables were the demographics of the respondents: age, education, and gender. The eight dependent variables were the constituents' perceptions of actual and ideal transformational leadership attributes. The

actual transformational attributes were (a) Idealized Influence, (b) Inspirational Motivation, (c) Intellectual Stimulation, and (d) Individualized Consideration. The ideal transformational attributes were (a) Idealized Influence, (b) Inspirational Motivation, (c) Intellectual Stimulation, and (d) Individualized Consideration. As mentioned earlier, this study does not have any intention of conducting a casual or comparative analysis. Thus, there was no attempt to determine a cause and effect relationship between variables. Further, inferential statistics were not utilized in this study to infer findings to other populations since the sample population was not randomly selected.

The first research question sought to examine to what extent constituents rated actual transformational leadership attributes to encourage them to co-learn and co-create knowledge with other team members. The second research question sought to examine to what extent constituents rated idealized transformational leadership attributes to encourage them to co-learn and co-create knowledge with other team members. The third research question sought to examine the differences between the actual and the idealized transformational leadership attributes. Means and standard deviation were utilized to analyze the first three questions.

The fourth research question sought to examine if each of the four actual and idealized transformational leadership attributes were related. To examine the relationship between each of the four actual and idealized attributes, a Pearson Correlation Coefficient was calculated. This was the correct statistic when examining the relationship between two continuous variables.

The data collected from the questionnaires used two types of measurement scales: nominal (i.e., age, gender, and education) and interval (i.e., the eight leadership attributes).

Results

Demographics of Participants

There were 47 individuals who participated in this leadership study (Figure 1, Figure 2, Figure 3, Figure 4). Their ages were divided into four groups, with 8.5% ($n=4$) in the 18-25 group, 27.7% ($n=13$) in the 26-35 group, 46.2% ($n=22$) in the 36-45 group, and 17% ($n=8$) in the 46-55 group (Figure 1). A majority of the participants, 85.1% ($n=40$), were males, and 14.9% ($n=7$) were females. There was one individual (2.1%) who had an Associate Degree, 59.6% ($n=28$) had a Bachelor's degree, and 38.3% ($n=18$) had a Master's degree. There were six teams, ranging from 5 to 11 persons per team.

Research Question 1

To what extent do actual transformational leadership attributes as perceived by team members encourage them to co-learn and co-create knowledge? This question seeks to understand from the data collected from team members to what extent do actual transformational leadership attributes demonstrated by their leader, such as Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration, encourage them to co-learn and co-create knowledge among themselves.

Findings for research question 1. The data collected from team members depict that, on an average, participants' perceptions of actual leadership attributes such as Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individualized

Figure 1. Age of the participants.

Age	18-25	26-35	36-45	46-55
Age	4	13	22	8
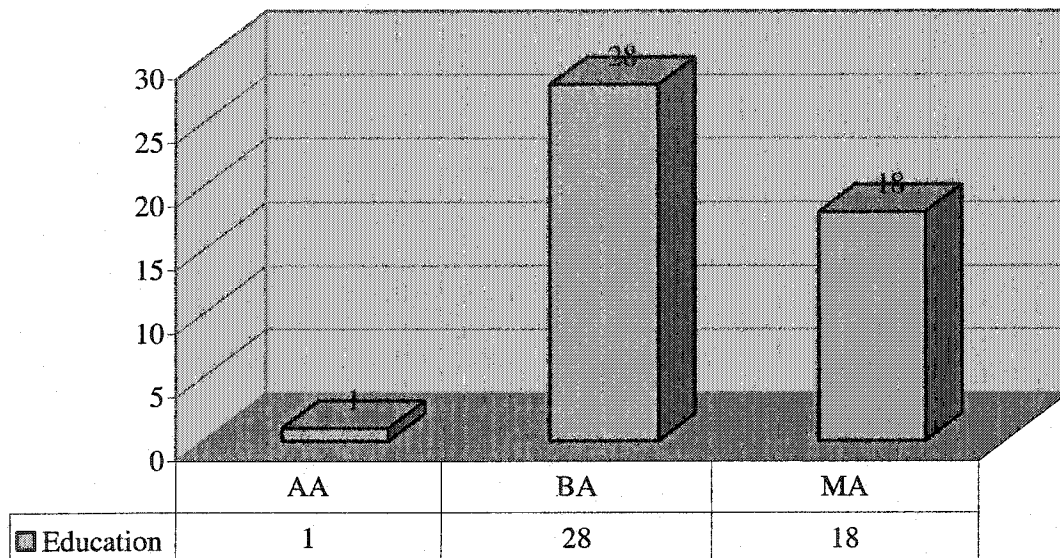
Figure 2. Educational level.

Education	AA	BA	MA
Education	1	28	18

Figure 3. Gender.

	Male	Female
Gender	40	7
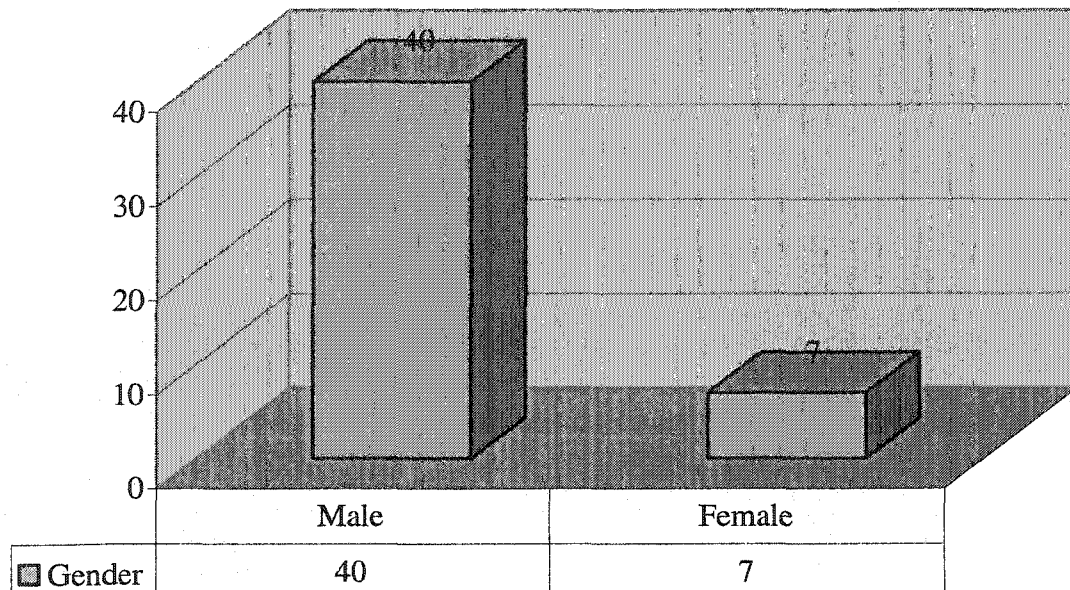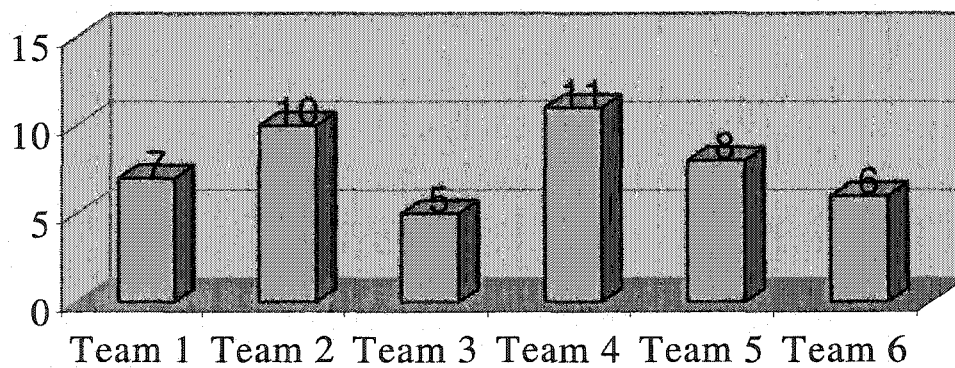
Figure 4. Number of teams and number of members per team.

Consideration demonstrated by their leaders ranged from "a small to moderate

extent" to "a moderate extent." Idealized Influence had a mean of 2.60 and a standard

deviation of .63. Inspirational Motivation had a mean of 2.66 and a standard deviation of

.79. Intellectual Stimulation had a mean of 2.79 and a standard deviation of .80.

Individualized Consideration had a mean of 2.91 and a standard deviation of .92 (Table 3,

Figure 5).

Table 3

Means and Standard Deviations for Actual Leadership

Actual Attribute	Mean	Standard Distribution
Idealized Influence	2.60	.63
Inspiration Motivation	2.66	.79
Intellectual Stimulation	2.79	.80
Individual Consideration	2.91	.92

	Idealized Influence	Inspirational	Intellectual	Individual
▣ Actual	2.6	2.66	2.79	2.91
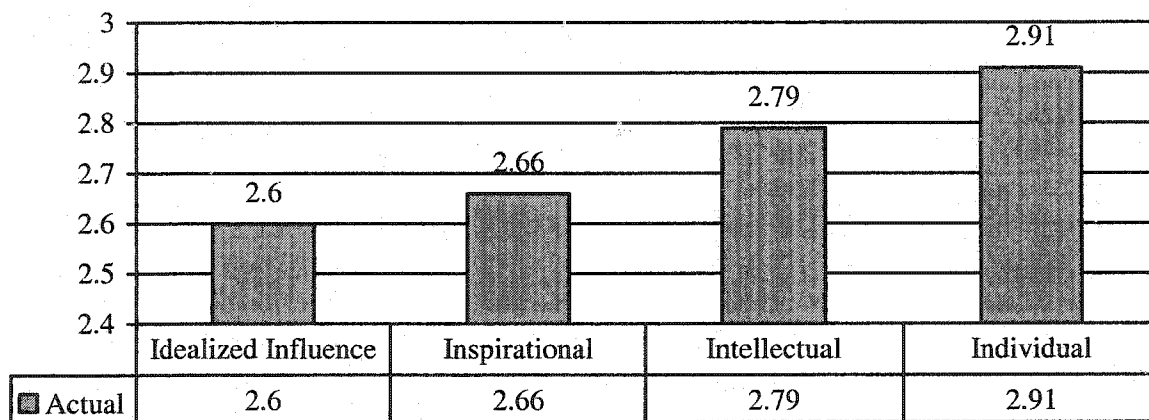
Figure 5. Actual leadership attributes.

Research Question 2

To what extent do ideal leadership attributes as perceived by team members

encourage them to co-learn and co-create knowledge? This research question seeks to

understand, through the perception of constituents, the order of importance of

transformational leaderships attributes such as Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration that encourage them to co-learn and co-create knowledge.

Findings for research question 2. The data collected from the perception of team members ranked actual transformational leadership attributes from high to low as follows: Individualized Consideration, Intellectual Stimulation, Inspirational Motivation and Idealized Influence. Individualized Consideration had a mean of 2.91; Intellectual Stimulation had a mean of 2.79; Inspirational Motivation had a mean of 2.66; and Idealized Influence had a mean of 2.6 (see Table 4 and Figure 6).

Table 4

Order of Importance: Means for Actual Leadership

Actual Attribute	Mean
Individual Consideration	2.91
Intellectual Stimulation	2.79
Inspiration Motivation	2.66
Idealized Influence	2.60

Research Question 3

What are the differences between "actual" and "ideal" leadership attributes as perceived by constituents that encouraged them to co-learn and co-create knowledge with other constituents? This question seeks to understand to what extent ideal transformational leadership attributes perceived by constituents encourage them to co-learn and co-create knowledge with other constituents. More specifically, this research

question examined participants' perception of ideal transformational leadership attributes

on Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and

	Idealized Influence	Inspirational	Intellectual	Individual
▨ Actual	2.6	2.66	2.79	2.91

Figure 6. Rank of actual leadership attributes.

Individualized Consideration that encouraged them to co-learn and co-create knowledge

with other team members.

Findings for research question 3. The data depict that, on an average,

participants' perceptions of ideal transformational leadership range from "a great extent"

to "a very great extent." Specifically, Idealized Influence had a mean of 4.56 and a

standard deviation of .53; Inspirational Motivation had a mean of 4.66 and a standard

deviation of .51; Intellectual Stimulation had a mean of 4.63 and a standard deviation of

.46; and Individualized had a mean of 4.69 and a standard deviation of .41 (see Table 5

and Figure 7).

Table 5

Means and Standard deviations for Ideal Leadership Attributes

Ideal Attribute	Mean	Stand. Deviation
Idealized influence	4.56	.53
Inspirational Motivation	4.66	.51
Intellectual Stimulation	4.63	.46
Individual Consideration	4.69	.41

Ideal Leadership Attributes

	Idealized	Inspirational	Intellectual	Individual
■ Idealized	4.56	4.66	4.63	4.69
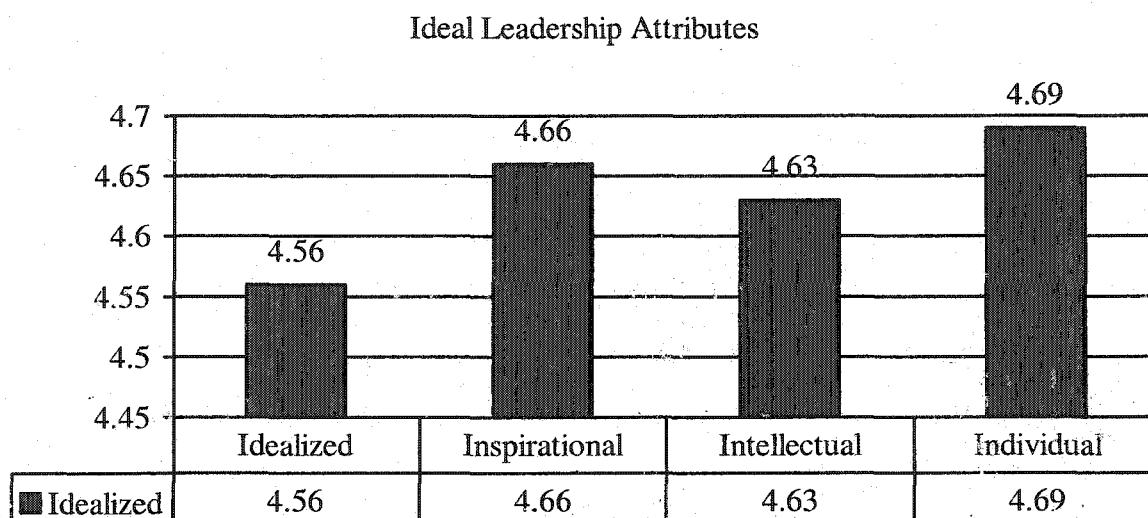
Figure 7. Ideal leadership attributes.

Research Question 4

What is the order of importance constituents place on ideal transformational leadership attributes that encourage constituents to co-learn and co-create knowledge with other constituents? This research question seeks to understand in general how constituents prioritized in their perceptions of the actual transformational leadership attributes Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration that encourage co-learning and co-creation of knowledge with other team members.
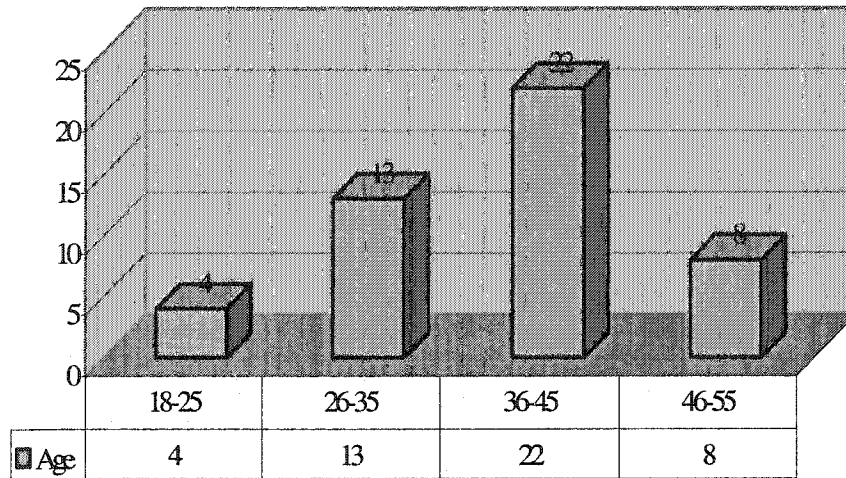
Research Question 5

What are the differences between actual and ideal transformational leadership attributes perceived by constituents that encouraged them to co-learn and co-create knowledge with other constituents? This research question examined the difference between the participants' actual and idealized perceptions on Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration.

Findings for research question 5. The results described most participants' perceptions of actual leadership attributes from "a small to moderate extent," and the ideal leadership attributes from "a great to very great extent." The difference between the ideal and the actual Idealized Influence was a mean of 1.96 and a standard deviation of .10. The difference between the ideal and the actual Inspirational Motivation was a mean of 2.00 and a standard deviation of .28. The difference between the ideal and the actual Intellectual Stimulation was a mean of 1.84 and a standard deviation of .44. The difference between the ideal and the actual Individualized Consideration was a mean of 1.78 and a standard deviation of .51 (Table 6, Figure 8, and Figure 9).

Table 6

Means and Standard deviations for Actual and Idealized Attributes of Leaders

Attribute	Actual	Ideal	Dif.	Actual	Ideal	Dif.
Leadership Attribute	Mean	Mean	Mean	Stand. Dev.	Std. Dev.	Std. Dev.
Idealized influence	2.60	4.56	1.96	.63	.53	.10
Inspirational Motivation	2.66	4.66	2.00	.79	.51	.28
Intellectual Stimulation	2.79	4.63	1.84	.80	.46	.44
Individual Consideration	2.91	4.69	1.78	.92	.41	.51

	Idealized Influence	Inspirational Motivation	Intellectual Stimulation	Individual Consideration
Actual	2.6	2.66	2.79	2.91
Idealized	4.56	4.66	4.63	4.69
Difference	1.96	2	1.84	1.78
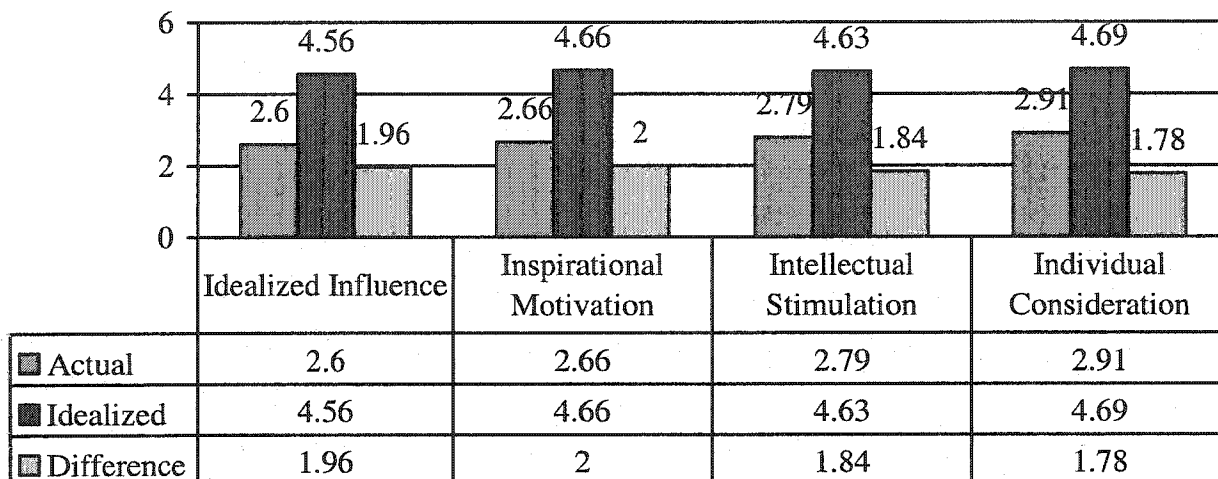
Figure 8. Means for actual and ideal attributes of leaders.

	Idealized Influence	Inspirational Motivation	Intellectual Stimulation	Individual Consideration
Actual	0.63	0.79	0.8	0.92
Idealized	0.53	0.51	0.46	0.41
Difference	0.1	0.28	0.44	0.51
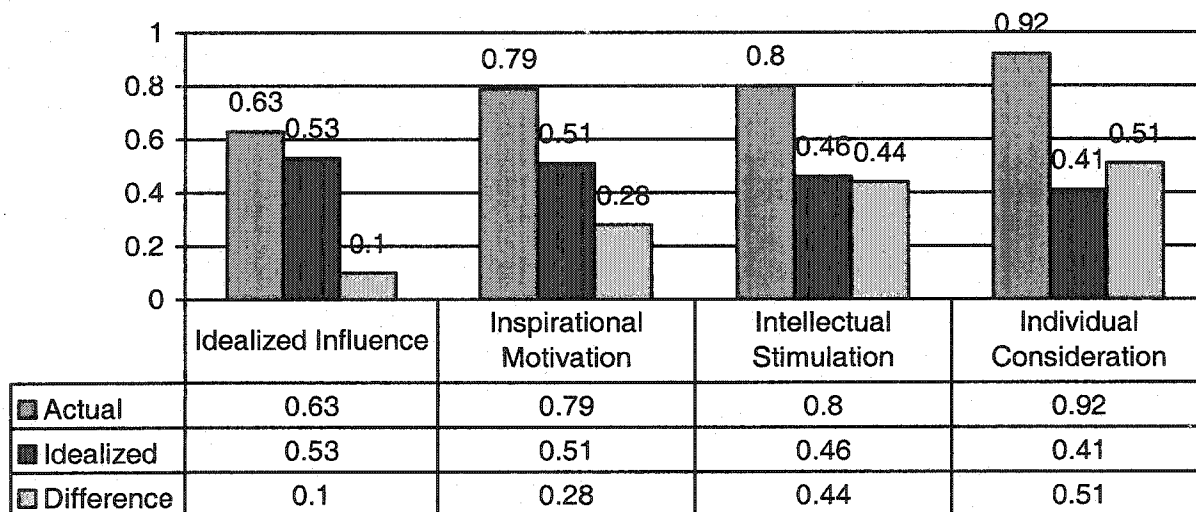
Figure 9. Standard deviation for actual and ideal attributes of leaders.

Research Question 6

Research question 6 examined the correlation between actual and ideal

transformational leadership attributes as perceived by constituents that encouraged them

to co-learn and co-create knowledge with other constituents. The research question

examined the relationship between the actual and idealized attributes on the four dimensions of transformational leadership: Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration.

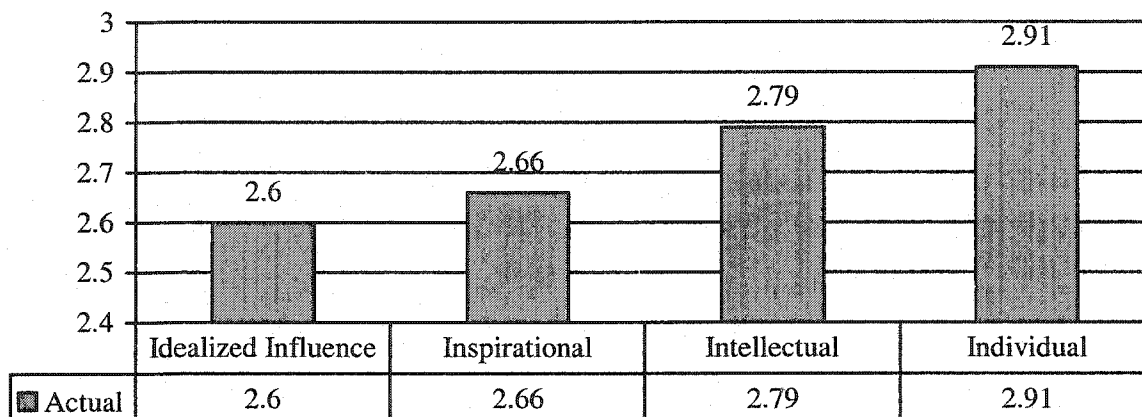*Findings for research question 6.* In terms of actual and idealized attributes, Table 7 depicts that a moderately statistically significant positive correlation was found for Intellectual Stimulation, $r = .36, p < .05$. This correlation indicates that, as constituents' perceived actual Intellectual Stimulation increased, perceived idealized Intellectual Stimulation increased. In other words, those with low actual Intellectual Stimulation scores had low idealized scores, while those who had high actual Intellectual Stimulation scores had high idealized Intellectual Stimulation scores.

A moderately positive correlation for Inspirational Motivation was found, $r = .32$, $p < .05$. This correlation indicates that, as actual Inspirational Motivation increased, idealized Inspirational Motivation increased. Those with low actual Inspirational Motivation scores had low idealized Inspirational Motivation scores, while those who had high actual Inspirational Motivation scores had high idealized Inspirational Motivation scores. Two non-significant correlations were found for actual and ideal Idealized Influence, $r = .18$, ns and for Individualized Consideration, $r = .20$, ns.

Table 7

Correlation Between Actual and Ideal Leadership Attributes

Leadership Attributes	Statistical Finding	Interpretation
Idealized influence	$r = .18$	Non significant correlation
Inspirational Motivation	$r = .32, p < .05$	Moderately positive correlation
Intellectual Stimulation	$r = .36, p < .05$	Moderately significant Positive correlation
Individual Consideration	$r = .20$	Non significant correlation

Summary of Findings

Forty-seven individuals participated in this leadership study. Their ages were divided into four groups: 4 participants were in the 18-25 group, 13 participants in the 26-35 group, 22 in the 36-45 group, and 8 in the 46-55 group. A majority of the participants were male (40), while only seven were female. Only 1 individual had an Associate Degree, 28 had Bachelor's degrees, and 18 had Master's degrees. There were six teams, ranging from 5 to 11 persons per team.

Participants' perceptions of actual leadership attributes on an average ranged from "a small to moderate extent" to "a moderate extent." Most participants' perceptions of ideal transformational leadership attributes ranged from "a great extent" to "a very great extent." Further, the results describing the participants' perceptions of actual leadership attributes ranged from "a small to moderate extent," and the ideal leadership attributes from "a great to very great extent."

A statistically significant positive correlation was found between actual and idealized Intellectual Stimulation. Also, a statistically significant positive correlation was found between actual and idealized Inspirational Motivation. Those with low actual Inspirational Motivation scores had low idealized Inspirational Motivation scores, while those who had high actual Inspirational Motivation scores had high idealized Inspirational Motivation scores. Also, as constituents' perceived actual Intellectual Stimulation increased, perceived idealized Intellectual Stimulation increased. Hence, the opposite was true; those with low actual Intellectual Stimulation scores had low idealized scores, while those who had high actual Intellectual Stimulation scores had high-idealized

Intellectual Stimulation scores. Two non-significant correlations were found for actual

and ideal Idealized Influence and for Individualized Consideration.

Chapter 5

Conclusions and Recommendations

The purpose of this chapter is to provide conclusions from the study and recommendations for future research. The conclusions and recommendations of this chapter will be based on the findings drawn from the various literature that was reviewed in Chapter 2 and findings drawn from the research findings of Chapter 4. To begin this chapter, the problem statement will be restated. Second, introductory rationale will be provided as a preliminary stage for the recommendations of the study. Third, conclusions will be drawn from the literature review. Fourth, conclusions will be drawn from the research findings. Fifth, the conclusions from the review of literature and the research findings will be interlaced to form the conceptual groundwork for the study's recommendations. Finally, the researcher will provide recommendations for further research.

This research project focused on the impact of transformational leadership attributes on the constituents' attitude to co-learn and co-create knowledge with other team members. As stated in Chapter 1, the ultimate goal of this study is to create a new leadership model that will bridge the gap that threatens the applicability of the leadership paradigm in the knowledge-based global-economy.

Problem Restated

The global social economy has transitioned to one with a knowledge –base; however, organizations still operate out of the century-old leadership paradigm that focuses on the labor of the workforce. This orientation of the leadership paradigm on labor has, to date, neglected to investigate the role of leadership in generating, sharing,

disseminating and applying knowledge. More specifically, the leadership theories lack an adequate model to study the impact of leadership characteristics on constituents' attitudes and abilities to synergize their collective intelligence to co-learn and co-create knowledge that can produce quantum breakthroughs. Although organizations are aware of the fact that the intelligent and knowledgeable employees are critical to organizational success, and that the relationship between leaders and constituents enables the co-creation of knowledge, there is very little attention paid to utilizing that relationship to encourage the workforce to collectively capture, create, share, disseminate and utilize knowledge for global competitiveness.

Conclusions from Review of Literature and Empirical Findings

This section will provide conclusions for the study. The study reviewed related literature and conducted an empirical investigation that provides insights and conclusions that are the bases of the author's recommendations. To start, conclusions will be drawn from both the literature that was reviewed in Chapter 2 and the empirical findings detailed in Chapter 4. Next, conclusions from the literature and the empirical findings will be interlinked and aligned to form a conceptual framework that will form the basis for the recommendations of the study. Finally, the recommendations of the study will be provided.

Conclusions from review of literature. This section will provide general conclusions drawn from the readings that were reviewed for the study and will provide a conceptual foundation for the recommendations of the study. The literature reviewed in Chapter 2 was divided into three areas: (a) knowledge as a driving force and implications,

(b) the leadership analytical framework, and (c) knowledge workers conceptualized as adult learners.

Two major conclusions were drawn from the literature considered: knowledge as a driving force and the importance of leadership. First, the driving force of knowledge has transformed the global socio-economy to a knowledge base. Second, the literature that was reviewed on leadership concluded that there is a significant gap in the leadership paradigm that threatens the applicability of leadership in the knowledge-based global socio-economy.

The literature reviewed on andragogy, adult Learning, social constructivism and experiential learning theories provided insights on the ecology of knowledge workers as individuals and as a social unit that co-learns and co-creates knowledge. Several key conclusions were drawn from the review of literature. First, a knowledge worker matures as his/her self-concept moves from dependency to self-directed to learning. Second, a knowledge worker mature as he/she accumulates a growing repository of experience-based knowledge that increases his/her mental faculty to learn more efficiently and effectively. This in turn requires that a leader utilize a person's intellect both at an individual and group level. Third, as the knowledge worker matures, his/her professional life and other social roles orient him/her to seek out opportunities to learn and create knowledge for his/her own benefit. Fourth, as the knowledge worker matures, he/she demands real-time application and problem-centered learning experiences that add value to his/her own life. Lastly, as a knowledge worker matures, he/she is increasingly motivated to learn and create knowledge with others to better his/her life.

Conclusions from research findings. This section will provide general conclusions drawn from the empirical findings of the study to provide an empirical foundation for the recommendations of the study. When participants were asked to what extent they actually perceive their team leaders to have demonstrated transformational leadership attributes that encourage co-learning and co-creation of knowledge, participants' responses ranged from "a small to moderate extent." On the other hand, when participants were asked to what extent they ideally perceive their team leaders' demonstration of transformational leadership attributes that would encourage co-learning and co-creation knowledge, participants' responses ranged from "a great extent" to "a very great extent." These findings conclude that, although constituents ideally would have liked to see their leaders demonstrate leadership attributes that encourage co-learning and co-creation of knowledge, according to the actual perceptions of constituents, leaders did not demonstrate these leadership attributes.

When participants were asked to rank their team leaders' leadership attributes according to their actual perception, participants ranked actual from most to least as follows: Individualized Consideration, Intellectual Stimulation, Inspirational Motivation, and then Individualized Influence. This finding revealed respondents' perceptions that their leaders' actual transformational leadership attributes have encouraged them to co-learn and co-create knowledge. However, because actual transformational leadership attributes ranged from "a small to moderate extent" to "a moderate extent" to have encouraged constituents to co-learn and co-create knowledge, this finding does not have any significant impact on the behavior of constituents to co-learn and co-create knowledge.

On an average, most participants ranked ideal transformational leadership attributes from most to least as follows: Individualized Consideration, Inspirational Motivation, Intellectual Stimulation then Individualized Influence. This finding revealed that transformational leadership attributes as ideally perceived by constituents have a direct impact on constituents' behaviors and attitudes toward the ability to co-learn and co-create knowledge. Individualized Consideration was ranked as the most significant transformational attribute that encourages constituents to co-learn and co-create knowledge. Inspirational Motivation, Intellectual Stimulation and then Individualized Influence were respectively ranked by constituents to have impacted them to co-learn and co-create knowledge.

Overall, these findings revealed a consistent gap between the actual and the ideal leadership attributes of team leaders, as perceived by constituents, that encouraged them to co-learn and co-create knowledge with other constituents. Although participants were clear that, according to their perception, transformational leadership attributes ideally encourage them to co-learn and co-create knowledge with one another, team leaders did not actually demonstrate these transformational leadership attributes. Thus, the findings revealed that, as leaders increased the perceptions of constituents in the four transformational leadership attributes, constituents were more likely to co-learn and co-create knowledge with other team members. Also, the findings revealed that constituents ideally ranked Individualized Consideration, Inspirational Motivation, Intellectual Stimulation and Individualized Influence in order of importance as leadership attributes that would encourage them to co-learn and co-create knowledge with other team members.

Recommendations of the study. The recommendations of the study will be based on the conclusions drawn from the literature review and the empirical findings. A conceptual framework will be formulated by aligning the conclusions drawn from the empirical findings and the literature.

The findings of the literature that was reviewed were aligned to the findings of the empirical findings that leadership must be strong to lead a workforce in the knowledge-based global socio-economy. According to participants' responses, participants depicted a significant gap between what they ideally wanted to see from their team leaders' leadership attributes what they actually perceived from their leaders that would encourage them (constituents) to co-learn and co-create knowledge. The perceived gap depicted in the empirical findings was aligned to what the literature found. The literature also revealed a significant gap in the leadership paradigm that does not address the requirements of the workforce in the knowledge-based global socio-economy. The conclusions drawn from the literature and the empirical findings not only depicted a leadership gap, but also, more importantly, challenge scholars and professionals of the leadership paradigm to assess and prescribe a solution that would bridge the sustained leadership gap.

In addition, the participants' responses indicated that, among the four attributes of transformational leadership, constituents ranked Individualized Consideration highest on their actual and ideal perception of what encouraged them to co-learn and co-create knowledge. The literature revealed that the self-interest of constituents (followers) is a powerful force that is required by knowledge workers under leaders who encourage constituents to co-learn and co-create knowledge. The literature also concluded that

followers have needs, dreams, challenges and interests that must be met by leaders in order for a knowledge-based workforce to synergize and co-produce knowledge for the organization. The research suggests that followers need to feel that the leadership of organizations genuinely considers and values the followers' self interest, dreams and challenges; leaders must create a scenario where both the interest of the organization and the interest of the followers are synergized to create a positive situation.

Constituents also ideally ranked Intellectual Stimulation, Inspirational Motivation and Idealized Influence highly as transformational attributes that encouraged them to co-learn and co-create knowledge. The literature on the knowledge-based workforce, adult learning theory, and constructivism concluded that knowledge workers were highly motivated and inspired by opportunities to stimulate their intellect by co-learning and co-creating knowledge with others.

Conclusions and Recommendations

The conclusions drawn from both the review of literature and the empirical findings depict that there is a significant gap that must be bridged in the leadership paradigm to encourage the workforce of the knowledge-based global socio-economy to co-create and co-learn knowledge. As stated in chapter 1, the ultimate goal of this study is to create a new leadership model that will bridge the gap that threatens the viability of the leadership paradigm in the knowledge-based global-economy. Based on the conclusions drawn from the literature and the empirical findings, the study recommends synergistic leadership as the leadership model that would first, conceptually bridge the leadership paradigm gap; second, it would facilitate the transition and the reorientation of

leaders and constituents to meet the requirements of the knowledge-based global socio-economy.

Synergistic Leadership

As a leader in the world of intellect and pursuance of knowledge, Albert Einstein also provided guidance to this study through his writing and quotations. Einstein provided direction to anyone attempting to solve any significant problems: "we cannot solve any significant problem from the same mindset that created it." The author created Synergistic Leadership as the leadership model that would bring about the transformation that he seeks. By applying Einstein's direction to the endeavor of this dissertation, the author understands that, in order to bring about the transformation that he seeks to experience in the leadership paradigm, he must reflect in his work (Synergistic Leadership) the experience that he seeks. Such transformation requires depth in the assessments and prescriptions that penetrate beyond superficial changes of leadership models and frameworks. An attempt to create new superficial leadership models from the same mindset that created the current leadership dilemma would only prolong the risk that currently threatens the applicability and viability of the leadership paradigm in the knowledge-based global economy.

The counsel of Einstein led the author to accept that the transformation that he seeks in the leadership paradigm requires reflection, assessment and prescription that must begin with the mindset. The transformation required a new mindset that would be reflected in the new leadership model (Synergistic Leadership) that the author believed would bring about the experience that he seeks in the leadership analytical framework irrespective of traditional names, charters, and/or boundaries. Hence, the counsel of

Einstein to seek a new mindset as the basis of significant and transformational changes led the author to other paradigms not normally included in the current leadership analytic framework, such as knowledge management, knowledge ecology, andragogical theory, learning theory, social cognition, constructivist learning, and teaching theories. These theories and practices provided new insights, perspectives and beliefs that assisted the author in formulating the new mindset that has led to the construction of the prescribed leadership model (Synergistic Leadership), which the author believes will transform the leadership paradigm to meet the requirements of the knowledge-based global socio-economy.

Four New Leadership Mindsets

In order to see clearly the difference between the mindset that created the current leadership paradigmatic gap and the new mindset that would be the basis of the new leadership model (Synergistic Leadership), this section will depict the transition that has to be made from the old to the new mindset. There are three major differences from the old thinking to the new mindset that necessitate the transitions that have to be made in order to experience the transformation that has to happen to the leadership paradigm to meet the requirements of the knowledge-based global socio-economy.

Leading from the inside out. The first major difference from the old mindset of the current paradigm from the new is that the old-oriented leaders are concerned with followers' external behaviors. The new mindset orients leaders to lead from the inside out, rather than from the outside in. The external approach created the transactional theories that taught leaders that their commands and rewards would motivate ideal behaviors from followers. In return, followers would spend a lifetime developing external

skills to meet the perceived ideal behaviors sought from leaders of organizations in order to gain rewards. However, a whole generation of workforce members who operated from this mindset end up spending a lifetime developing external skills and, toward retirement age, they begin to discover that they have a talent that was never acknowledged, developed or applied. Often, when people are asked of their talents, a blank stare is the usual reaction. On the other hand, when people ask of skills, degrees are sited and memberships of professional associations are demonstrated. The new mindset orients leaders to first lead themselves inwardly to discover their talents and, from such experience, lead constituents to experience discovery of their own individual talents.

Michael Jordan did not go to school to be a basketball player. His gift to play basketball was from within. He then developed his basketball skills to fully maximize his talent. Naturally, when people operate from their talents, their level of energy, creativity, commitment and performance is extremely high. On the other hand, when people are skillful in areas outside of their talents, their level of energy, creativity, and performance is naturally low.

Appreciation of knowledge and intellectual capability. The second major difference from the mindset of the current leadership to the new mindset that necessitates transition is that the old mindset orients leaders to see followers only as laborers and view the knowledge and the capability of followers as a threat to their leadership. The new mindset reorients leaders to appreciate the knowledge and the intellectual capability of constituents. The workforce of the twenty-first century goes to the workplace educated with knowledge and develops intelligence that leaders must appreciate, nurture and utilize.

Synergized leadership. The third major difference between the mindset of the current leadership and the new mindset that necessitates transition is that the old mindset orients leaders to believe that leadership is only about leading people to produce superior products and services. The new mindset reorients leaders to go beyond the viewpoint that sees leadership as a means to develop product and services, to see leadership as the ability and capability to develop individuals and communities to synergize individual and collective talents, knowledge and intelligence.

Social leadership. The fourth major difference from the mindset of the current leadership to the new mindset that necessitates transition is that the old mindset orients people to believe that leadership is a position and only one leader in a team can lead to the mindset of co-leadership through the concept of fluidity and emergence. The old mindset restricts leadership to one individual and neglects the collective leadership capability of a community. The new mindset views leadership as a social process by which leadership is fluid and where constituents can co-lead a team. In addition, the new mindset encourages constituents' leadership to emerge naturally among team members. This mindset allows constituents to emerge naturally to lead in different situations based on their talents, intelligence and expertise.

The four principles that make up the new mindset of the leadership model will transform the leadership paradigm as we know it using natural laws as its basis. These principles operationalize the domain of individuals and the relationships that require leaders to synergize talents, intelligence and knowledge of a community. Thus, to lead is to lead one's self, to discover one's gift, and to lead others is to lead constituents to self

discover their individual and collective gifts for self fulfillment that will naturally produce synergistic performance.

The new mindset is the mindset that created the leadership model called Synergistic Leadership. The author firmly believes that the Synergistic Leadership model will transform the leadership paradigm to meet the requirements of the knowledge-based global socio-economy. Synergistic Leadership is based on the following principles: inside out, talent, intelligence, knowledge, fluidity, and emergence. Synergistic Leadership operates within an individual and within a community. Hence, the transition from the old to the new mindset is depicted as follows (Table 8).

Table 8

Transition of Leadership Mindset

Individual Level	Community Level
1. From the outside skills to embedded talents	From cross-functional team to cross-talented team
2. From labor to knowledge and intelligence	Systems and processes to collective intelligence and collective knowledge
3. Producing products and services at an individual level	From output to synergy
4. From formal position to fluidity and emergent leadership	From one leader to co-leadership

The new leadership model described above will be referred to from this point on as Synergistic Leadership. This leadership model is based on the idea that "leadership" in itself is an operating principle that is deep within people and, when it is discovered and developed, is broader than the sum total of its parts. This leadership model operates on an individual level and on a community level. Leadership can be explored as a social process—something that happens between people (Weisbord & Janoff, 1995). It is not so

much what leaders do as it is something that arises out of social relationships among constituents who are considered leaders in their own rights (Wheatley, 1992). As such, it does not depend on one person, but on how people perform together in a leadership capacity to make sense of situations and challenges to gain communal opportunities. The depth of synergistic leadership may be clearer when we consider that a learning community will attract knowledgeable workers who are leaders in their own right, and who individually have made a conscious decision to form alliances with other leaders where they can co-lead in order to synergize their talents, intelligence and knowledge. This definition situates leadership broadly within the patterns of knowledge that flow among leaders to facilitate their relationships in a learning community (Senge, 1994). These multi-relationships and patterns of knowledge that flow among leaders energize people's intellect and talents that together synergize a learning community to gain knowledge that is greater than the total sum of each member. An energized environment loosens the grip of autocracy, linear direction, formal orientations, and the external focus of leadership and releases the gifts of people from within to create synergy. Excitement, stimulation, and creativity propel the learning community, as a whole, to enable various members to take on the leadership role in different times, places and situations to continue the synergy. This shift in the leadership paradigm is about learning together, assertively co-constructing knowledge by requiring that each member of the team operate within his/her intellect and talents to bring about everyone's leadership characteristic to synergize team performance (Schein, 1992). With this view, opportunities surface to lead, facilitate, and mediate perceptions, talents, values, beliefs, and information. This view

presupposes that any individual or group of individuals can all lead individually and collectively.

Synergistic Leadership may be much clearer when it is operationally defined through current leadership models that can be aligned and coupled to form a comprehensive model that reflects Synergic Leadership mindsets and principles. Synergistic Leadership can be realized by bringing transactional and transformational leadership models together as one comprehensive model that would acknowledge individuals' talents, intelligence, knowledge. This model provides a clear sense of direction within the current leadership framework in order to make the transition successfully through deeply held core beliefs and inclinations.

This comprehensive model submits that transformational leadership serves the deeper and higher principles of leadership, such as collective talents, collective intelligence, and collective knowledge, which includes shared vision, missions, and shared values. However, high-level beliefs from within an individual or a community are paralyzed without the lower and external approach when using the systematic and mechanical approach of the transactional leadership model. The transactional leader puts together the infrastructure, processes, tools and incentive systems to reflect and be aligned with the inner gifts of a community to unleash the synergy. Vice-versa, transactional leadership that serves the lower level of operational functions is paralyzed without the guidance of the high-level thinking provided by the transformational leadership model. Thus, one approach is dysfunctional without the other. Yet, both approaches, as a comprehensive model, provide the historical framework and foundation

for the new leadership paradigm. More importantly, it is wise to remember the priority of the model; begin first from the inside, then allow the inside to guide the outside.

Synergistic Leadership is founded on four major constructs: talent, intelligence, knowledge and co-leadership. This is a major divergent from the mindset that created the century-old leadership paradigm. A natural transition has to take place from the old to the new on three dimensions:

1. From task and labor orientation to knowledge-based orientation.

2. From formal leadership as a position to emergent leadership that relies on knowledge and talents.

3. From individual leadership to co-leadership.

Synergistic Leadership explores leadership on the social dimension as something that happens between people. It is not centered on what leaders do, but on what arises out of social relationships among constituents. As such, leadership does not depend on one person, but on how people perform together in a leadership capacity to make sense of situations and challenges to gain mutual benefits for constituents and organizations.

A learning community that relates to learners as leaders will attract knowledge workers who are leaders their own world. Hence, knowledge workers will individually make a conscious decision to form alliances where they can co-lead in order to synergize their knowledge to co-construct new knowledge for mutual benefits. Synergistic Leadership then situates leadership broadly within the patterns of knowledge that flow among leaders to facilitate their relationships in a learning community (Senge, 1994). These multi-relationships and patterns of knowledge flow create an energy that synergizes the co-learning and co-creation of knowledge that is greater than the total sum

of each member's knowledge. An energized environment loosens the grip of autocratic, linear-directional, and formal-oriented leadership.

Synergistic Leadership enables excitement, stimulation, and creativity to allow various constituents with leadership capabilities to take on the leadership role at different times and places to both fully maximize constituents' leadership capabilities and their relationships. This shift in the leadership paradigm is about learning together, assertively co-constructing knowledge with synergized relationships that appreciate and utilize the unique leadership characteristics of each member for synergistic performance. With this view, opportunities surface to lead, facilitate, and mediate perceptions, values, beliefs, and information. This view presupposes that any individual or group of individuals can lead.

Synergistic Leadership operates with the assumption that employees are leaders of their own world and creators of knowledge that will transform the formal leader so all can help raise a community to a higher level—synergistic performance. This view then places leadership in the position of a transforming function that embraces the leadership capacity of employees (talents, skills, knowledge and self interests), and aligns it with organizational goals for synergistic performance.

Limitations of the Study and Recommendations for Future Studies

The conceptualizations of leadership and knowledge remain split between the various disciplines of leadership scholars, organization scientists, technologists, and information scientists, suggesting a lack of comprehensive synthesis across superficial boundaries dividing understanding about leadership and knowledge. Trade publications are often driven by a technology focus and often confuse the powerful concepts of

leadership and knowledge, which is a human endeavor with the machines that provide information management and data management.

The chief limitation of this study is that it is a static and linear study of the relationship between leadership and social learning between constituents. Although this type of research is the norm in studying leadership, the limitation is that real life leadership phenomenon's do not stop simply because researchers want to study relationships between variables. Leadership is highly complex and a dynamic phenomenon that this study, like other studies, has studied in a linear, mechanical and isolated fashion.

The first limitation of this study is that it does not have a coherent and overarching framework that integrates the conceptual, theoretical, and empirical work into a tool that can study leadership in its complexity real time. This research project attempted to utilize theories as the basis for formulating its research questions, which naturally led this study to use only single, linear and fragmented theories. As such, this study can only account for relatively small amounts of variance in explaining the complexity of leadership. This, of course, is a significant limitation because the phenomenon of leadership and its impact of co-learning and co-creation of knowledge is a highly complex and dynamic phenomenon. Thus, this study recommends that, for further research, researchers and practitioners attempt to study leadership and social learning in a multi-theoretical perspective as a way to help compare and integrate diverse theories to increase the explanatory power of research efforts.

A second limitation of this research project, which is also evident in existing literature, is the fact that most research studies are conducted at a single level of analysis.

Like this study and other studies reviewed, multiple level analyses are a significant limitation in research. The impact of leadership in a learning community is a complex system composed of components and properties that exist at all levels. A full explanation of the particular configuration of the interaction between leadership and constituents' co-learning and co-constructing knowledge in a learning community requires explanations from all levels that exist in a real-life phenomenon. Thus, the framework to study such complex phenomena has to be multilevel in nature.

This limitation of the study inspires a recommendation for future research to study the relationship of leadership and the co-creation of knowledge in a learning community with a multilevel approach, which includes in the framework other learning communities by which the focal learning community being studied may be affected. This provides a much broader, comprehensive analytical context, in which to situate leadership in a learning community that has not been available to date. Further, contemporary scholars are exploring challenging frontiers in science that are associated with the emergence of system that can be applied to the study of leadership that influences the emergence of a learning community. Emergent systems that can be operationalized as a learning community have properties such as complexity, chaos and co-evolution. This view of contemporary science has not yet penetrated into the domain of leadership's impact in a learning community. This type of research can look at leaders and constituents as members who follow explicit or implicit rules in learning communities that may be independent or interconnected. Constituents and leaders observe behaviors of other leaders and constituents in other learning communities to whom they are connected in their local environment and respond to them. As they follow these implicit and explicit

rules, a birth of a new social structure emerges, which we can refer to as a learning community. Thus, if the rules and/or the interconnections (which are defined as the knowledge transferred between learners) change due to leadership's actions and influences, the social structure changes, and a new social structure will emerge as a new learning community. These implicit and explicit rules can be explained by multiple social theories at multiple levels that are ready for in-depth research.

The research conclusions has led the author, as a researcher and a practitioner, to believe that, as researchers endeavor to research highly complex and dynamic phenomena, such as leadership and social learning communities, we must change our paradigms, tools and methodologies to reflect the reality that we seek to study. Such change must not continuously attempt to simplify the complexity and dynamics of leadership and learning communities; rather, we must shift our paradigm and develop complex and dynamic research methodologies and tools that reflect the complexity and dynamic nature of leadership and learning communities that we seek to understand. Thus, deducting a highly complex and dynamic situation to several variables (dependent and independent of one another) is to continue the century-old paradigm. The dynamics of leadership require leaders to interrelate to multi-level and complex stimuli. Perhaps the compelling wisdom offered by Chung Tsu will offer wisdom to those who seek to make significant changes through future research:

> How shall I talk of the frost to the bird of the summerland,
> if it has never left the land of its birth?
> How shall I talk of life with the sage,
> if he is prisoner of his doctrine?

(Chung Tsu, 4th Century B.C., as cited in Fantini, 2002)

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Appendix A

A Leadership Survey

Team # _____

Age: Please circle the number on the right hand column (*Number*) 1-6 that
represents the age group you belong to.

Age Group	Number
18-25	1
26-35	2
36-45	3
46-55	4
56-65	5
66-older	6

Highest Educational Accomplishment: please circle your highest educational
accomplishment.

High school	Associate	Bachelor	Masters	PHD
1	2	3	4	5

Gender: Male/Female

Item 1-16: There are two "answer" columns to answer item 1-16. The left side
represents the "actual" leadership attributes you perceive of your leader. The
right side, represent the ideal leadership attributes that would encourage you to
co-learn and co-construct knowledge with other team members.
First go through and answer item 1-16 only on the "actual" side (answer column
to your left hand). Once you have completely filled out the left hand side, than go
back and answer item 1-16 on the "ideal" side (answer column to your right).
Please, do not answer the "actual" and the "ideal" column simultaneously.

Based on your perception of **actual** behaviors of your designated team leader, to what extent do these behaviors encourage you to co-learn and co-create knowledge with other constituents? Do you agree or disagree with these statements?

Based on your perception, what **ideal** leadership behaviors would you like to see in a leader that would encourage you to co-learn and co-create knowledge with other constituents? To what extent do you agree or disagree with these statements?

Never	To a small extent	to a moderate extent	To a great extent	To a very great extent	In my perception, the leader.........	Never	To a small extent	To a mode-rate extent	To a great extent	To a very great extent
					1. Is able to inspire constituents to collectively create a shared vision					
					2. Is able to make constituents feel at ease to share their knowledge					
					3. Is able to encourage constituents to take the lead in discussions					
					4. Is able to encourage constituents to push each other in order for the team to perform at a higher level					
					5. Is able to articulate the team's vision					
					6. Is able encourage constituents to collectively think strategically					
					7. Is able to see positives in knowledge shared by each constituents					
					8. Is able to inspire ethical behavior					
					9. Is able to encourages constituents to informally question each others' knowledge constructively					
					10. Is able to encourage constituents to help others think outside the box; paradigms/approaches					
					11. Is able to encourages constituents to collectively challenge ideologies of knowledge					
					12. Is able to purposely become an advocate for an issue that the team does not want to talk about to stimulate collective thinking					
					13. Shows a genuine interest to understand knowledge that I share					
					14. Show a genuine interest in my personal my knowledge base					
					15. Show a genuine interest in my talents					
					16. Show a genuine interest in my career development					

17. Please rank the following Transformational leadership attributes (1-4) that you believe would encourage you to co-learn and co-create knowledge with other constituents in your team. 1 being the most important to 4 being the least important to you.

_____Idealized influence

_____Inspirational motivation

_____Intellectual stimulation

_____Individualized consideration

Appendix B

Analysis Unit's Summary of Results

sub#	team#	Age	education	Gender	1a	1b	2a	2b
1	1	3	3	2	3	4	2	4
2	1	1	3	1	3	5	2	4
3	1	3	3	1	2	4	2	5
4	1	2	3	1	3	4	1	4
5	1	3	4	1	2	5	2	4
6	1	4	4	1	3	5	1	5
7	1	4	3	1	2	4	1	3
8	2	3	4	1	2	4	2	5
9	2	1	3	2	2	5	3	5
10	2	4	3	1	2	4	2	4
11	2	3	3	1	3	5	4	4
12	2	3	3	1	3	5	2	4
13	2	2	4	1	2	5	2	5
14	2	1	4	1	2	5	2	5
15	2	3	3	1	3	4	2	5
16	2	2	3	2	2	5	3	5
17	2	2	4	1	2	5	2	4
18	3	1	4	1	3	5	3	5
19	3	4	4	1	1	5	1	5
20	3	3	3	1	2	5	2	5
21	3	3	4	1	3	5	3	5
22	3	3	4	1	3	5	2	5
23	4	4	3	2	3	5	4	5
24	4	3	3	1	2	4	3	5
25	4	3	4	2	3	5	2	5
26	4	2	4	1	2	3	2	3
27	4	3	4	1	3	5	3	5
28	4	2	3	1	2	4	2	4
29	4	2	3	1	2	4	3	4
30	4	2	4	1	3	5	3	5
31	4	4	4	1	2	5	3	5
32	4	2	4	1	2	4	2	4
33	4	2	3	1	3	5	3	5
35	5	3	4	1	3	5	3	5

sub#	team#	Age	education	Gender	1a	1b	2a	2b
36	5	2	3	1	3	4	3	5
37	5	3	4	1	3	4	3	4
38	5	2	4	1	3	5	3	5
39	5	3	3	1	3	4	3	4
40	5	3	3	2	3	5	3	5
41	5	3	3	1	4	5	4	5
42	5	3	3	2	3	4	3	4
43	6	4	4	1	4	4	4	4
44	6	2	3	1	2	4	3	5
45	6	3	3	1	3	4	4	4
46	6	4	3	1	2	5	3	4
47	6	3	2	1	2	5	3	5
48	6	3	3	1	3	5	4	5

Appendix C

Research Questions

Forty-seven individuals participated in this leadership study. Their ages were divided into four groups with the 8.5% (n=4) in the 18-25 group, 27.7% (n=13) in the 26-35 year-old group, 46.2% (n=22) in the 36-45 group, and 17% (n=8) in the 46-55 year old group. A majority of the participants, 85.1% (n=40) were males and 14.9% (n=7) were females. There was one individual (2.1%) who had a High School diploma, 59.6% (n=28) had an Associate degree, and 38.3% (n=18) had a Bachelor degree. There were six teams, ranging from 5 to 11 persons per team.

Research Question 1

This research question sought to describe participates actual and idealized perceptions on Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration. Table 1 describes most participants' perceptions of actual leadership attributes from "a small to moderate extent," and the ideal leadership attributes from "a great to very great extent." The exception was Intellectual stimulation, which was perceived a moderate extent (Table 1).

Table C1

Means and Standard Deviations for Actual and Idealized Attributes of Leaders

Attribute	Mean	Standard Deviation
Actual Attribute		
Idealized influence	2.60	.63
Inspirational Motivation	2.66	.79
Intellectual Stimulation	2.79	.80
Individual Consideration	2.91	.92
Idealized Attribute		
Idealized influence	4.56	.53
Inspirational Motivation	4.66	.51
Intellectual Stimulation	2.79	.80
Individual Consideration	4.69	.41

Research Question 2

The second research question looked at the relationship between the actual and idealized attributes on these four dimensions of Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration. In terms of actual and idealized attributes, a moderately positive correlation for Intellectual Stimulation, r = .36, p < .05. This correlation indicates that as actual Intellectual Stimulation increased, idealized Inspiration Motivation increased. A moderately positive correlation for Inspirational Motivation was found, r = .32, p < .05. This correlation indicates that as actual Inspirational Motivation increased, idealized Inspirational Motivation increased. Two non-significant correlations were found for idealized influence, r = .18, *ns* and for individualized consideration, r = .20, *ns*.

Research Question 3

The third research question examined actual and idealized attributes by education, age, and gender. First, differences on actual attributes by the demographic information will be presented, then the idealized attributes by the demographics.

A MANOVA on actual Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration by education (Associate vs. Bachelor degree) was conducted. The results did not reveal an overall difference by education, Wilk's Lambda (4, 41) = .97, ns. Further, there was no univariate difference on each of the four attributes by education.

Univariate F-tests with (1,44) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
CONS_ACT	.30074	38.60144	.30074	.87731	.34279	.561
IDEA_ACT	.01398	18.18304	.01398	.41325	.03382	.855
INTE_ACT	.26919	28.89385	.26919	.65668	.40993	.525
MOT_ACT	.60059	28.30159	.60059	.64322	.93372	.339

- -

```
-> MANOVA
->   cons_act idea_act inte_act mot_act  BY age(1 4)
->   /PRINT SIGNIF(MULT UNIV )
->   /NOPRINT PARAM(ESTIM)
->   /METHOD=UNIQUE
->   /ERROR WITHIN+RESIDUAL
->   /DESIGN .
```

* * * * * * Analysis of Variance * * * * * *

47 cases accepted.
0 cases rejected because of out-of-range factor values.
0 cases rejected because of missing data.
4 non-empty cells.

1 design will be processed.

- -

Appendix D

Analysis of Variance - Age

******A n a l y s i s   o f   V a r i a n c e -- design   1 ******

EFFECT .. AGE
Multivariate Tests of Significance (S = 3, M = 0, N = 19)

Test Name	Value	Approx. F	Hypoth. DF	Error DF	Sig. of F
Pillais	.18028	.67133	12.00	126.00	.776
Hotellings	.20439	.65859	12.00	116.00	.787
Wilks	.82551	.66473	12.00	106.12	.781
Roys	.14023				

- -

EFFECT .. AGE
Univariate F-tests with (3,43) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
CONS_ACT	2.19245	36.73574	.73082	.85432	.85544	.471
IDEA_ACT	.87386	17.33359	.29129	.40311	.72260	.544
INTE_ACT	3.44757	25.79977	1.14919	.59999	1.91533	.141
MOT_ACT	1.65411	27.25546	.55137	.63385	.86988	.464

- -

-> MANOVA
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-> /NOPRINT PARAM(ESTIM)
-> /METHOD=UNIQUE
-> /ERROR WITHIN+RESIDUAL
-> /DESIGN .

* * * * * * A n a l y s i s   o f   V a r i a n c e * * * * * *

    47 cases accepted.
    0 cases rejected because of out-of-range factor values.
    0 cases rejected because of missing data.
    2 non-empty cells.

    1 design will be processed.

- -

Appendix E

Analysis of Variance - Gender

* * * * * * A n a l y s i s o f V a r i a n c e -- design 1 * * * * * *

EFFECT .. GENDER
Multivariate Tests of Significance (S = 1, M = 1 , N = 20)

Test Name	Value	Exact F	Hypoth. DF	Error DF	Sig. of F
Pillais	.03436	.37365	4.00	42.00	.826
Hotellings	.03559	.37365	4.00	42.00	.826
Wilks	.96564	.37365	4.00	42.00	.826
Roys	.03436				

Note.. F statistics are exact.

- -

EFFECT .. GENDER (Cont.)
Univariate F-tests with (1,45) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
CONS_ACT	.06391	38.86429	.06391	.86365	.07399	.787
IDEA_ACT	.18245	18.02500	.18245	.40056	.45548	.503
INTE_ACT	.00002	29.24732	.00002	.64994	.00003	.996
MOT_ACT	.05957	28.85000	.05957	.64111	.09292	.762

- -

IDEALIZED

-> MANOVA
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->   /PRINT SIGNIF(MULT UNIV)
->   /NOPRINT PARAM(ESTIM)
->   /METHOD=UNIQUE
->   /ERROR WITHIN+RESIDUAL
->   /DESIGN .

* * * * * * A n a l y s i s   o f   V a r i a n c e * * * * * *

       47 cases accepted.
      0 cases rejected because of out-of-range factor values.
      0 cases rejected because of missing data.
      4 non-empty cells.

      1 design will be processed.

- -

Appendix F

Analysis of Variance – Age

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design 1 * * * * * *

EFFECT .. AGE
Multivariate Tests of Significance (S = 3, M = 0, N = 19)

Test Name	Value	Approx. F	Hypoth. DF	Error DF	Sig. of F
Pillais	.28708	1.11113	12.00	126.00	.357
Hotellings	.32163	1.03635	12.00	116.00	.421
Wilks	.73812	1.07550	12.00	106.12	.388
Roys	.13089				

- -

EFFECT .. AGE (Cont.)
Univariate F-tests with (3,43) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
CONS_IDE	.33670	7.34681	.11223	.17086	.65689	.583
IDEA_IDE	.88117	12.17734	.29372	.28319	1.03718	.386
INTE_IDE	.53531	9.32108	.17844	.21677	.82316	.488
MOT_IDE	.90470	11.27349	.30157	.26217	1.15025	.340

- -

-> MANOVA
->   cons_ide idea_ide inte_ide mot_ide BY educ(2 3)
->   /PRINT SIGNIF(MULT UNIV)
->   /NOPRINT PARAM(ESTIM)
->   /METHOD=UNIQUE
->   /ERROR WITHIN+RESIDUAL
->   /DESIGN .
* * * * * * A n a l y s i s   o f   V a r i a n c e * * * * * *
      46 cases accepted.
       1 case rejected because of out-of-range factor values.
       0 cases rejected because of missing data.
       2 non-empty cells.

       1 design will be processed.

Appendix G

Analysis of Variance - Education

****** A n a l y s i s   o f   V a r i a n c e -- design   1 ******

EFFECT .. EDUCATION
Multivariate Tests of Significance (S = 1, M = 1 , N = 19 1/2)

Test Name	Value	Exact F	Hypoth. DF	Error DF	Sig. of F
Pillais	.16717	2.05738	4.00	41.00	.104
Hotellings	.20072	2.05738	4.00	41.00	.104
Wilks	.83283	2.05738	4.00	41.00	.104
Roys	.16717				

Note.. F statistics are exact.

- -

EFFECT .. EDUC (Cont.)
Univariate F-tests with (1,44) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
CONS_IDE	.56056	6.92857	.56056	.15747	3.55984	.066
IDEA_IDE	1.78624	11.23686	1.78624	.25538	6.99437	.011
INTE_IDE	.96404	8.75471	.96404	.19897	4.84512	.033
MOT_IDE	.72335	11.42882	.72335	.25975	2.78485	.102

- -

```
-> * Basic Tables.
-> TABLES
->  /BOXCHARS = SYSTEM
->  /FORMAT LIGHT VBOX FRAME SPACE BLANK MARGINS(1,80)
LENGTH(1,59) CWIDTH(24
-> ,11,24) INDENT(2) MISSING('.') WRAPCHARS(',/-') LLAYER
->  /OBSERVATION cons_ide idea_ide inte_ide mot_ide
->  /TABLES (cons_ide + idea_ide + inte_ide + mot_ide)
->  BY educ > (STATISTICS)
->  /STATISTICS
->  mean( 'Mean')
->  stddev( 'Std Deviation') .
```

	education			
	hs		associate	
	Mean	Std Deviation	Mean	Std Deviation
CONS_IDE	4.25	.	4.61	.46
IDEA_IDE	4.75	.	4.40	.58
INTE_IDE	5.00	.	4.51	.51
MOT_IDE	4.50	.	4.56	.62

	education	
	BA	
	Mean	Std Deviation
CONS_IDE	4.83	.27
IDEA_IDE	4.81	.35
INTE_IDE	4.81	.33
MOT_IDE	4.82	.24

```
-> MANOVA
->  cons_ide idea_ide inte_ide mot_ide  BY gender(1 2)
->  /PRINT SIGNIF(MULT UNIV )
->  /NOPRINT PARAM(ESTIM)
->  /METHOD=UNIQUE
->  /ERROR WITHIN+RESIDUAL
->  /DESIGN .
```

* * * * * * A n a l y s i s   o f   V a r i a n c e * * * * * *

    47 cases accepted.
    0 cases rejected because of out-of-range factor values.
    0 cases rejected because of missing data.
    2 non-empty cells.

    1 design will be processed.

- -

Appendix H

Analysis of Variance - Gender

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design   1 * * * * * *

EFFECT .. GENDER
Multivariate Tests of Significance (S = 1, M = 1 , N = 20)

Test Name	Value	Exact F	Hypoth. DF	Error DF	Sig. of F
Pillais	.03269	.35486	4.00	42.00	.839
Hotellings	.03380	.35486	4.00	42.00	.839
Wilks	.96731	.35486	4.00	42.00	.839
Roys	.03269				

Note.. F statistics are exact.

- -

EFFECT .. GENDER (Cont.)
Univariate F-tests with (1,45) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
CONS_IDE	.00650	7.67701	.00650	.17060	.03811	.846
IDEA_IDE	.28507	12.77344	.28507	.28385	1.00429	.322
INTE_IDE	.11263	9.74375	.11263	.21653	.52018	.474
MOT_IDE	.13087	12.04732	.13087	.26772	.48884	.488

- -

-- Correlation Coefficients --

```
          CONS_ACT  CONS_IDE  IDEA_ACT  IDEA_IDE  INTE_ACT  INTE_IDE

CONS_ACT  1.0000    .1975     .6594     .1839     .7993     .2203
          ( 47)     ( 47)     ( 47)     ( 47)     ( 47)     ( 47)
          P= .      P= .183   P= .000   P= .216   P= .000   P= .137

CONS_IDE  .1975     1.0000    .1683     .5932     .2659     .6994
          ( 47)     ( 47)     ( 47)     ( 47)     ( 47)     ( 47)
          P= .183   P= .      P= .258   P= .000   P= .071   P= .000

IDEA_ACT  .6594     .1683     1.0000    .1789     .6071     .1768
          ( 47)     ( 47)     ( 47)     ( 47)     ( 47)     ( 47)
          P= .000   P= .258   P= .      P= .229   P= .000   P= .235

IDEA_IDE  .1839     .5932     .1789     1.0000    .2853     .5929
          ( 47)     ( 47)     ( 47)     ( 47)     ( 47)     ( 47)
          P= .216   P= .000   P= .229   P= .      P= .052   P= .000

INTE_ACT  .7993     .2659     .6071     .2853     1.0000    .3618
          ( 47)     ( 47)     ( 47)     ( 47)     ( 47)     ( 47)
          P= .000   P= .071   P= .000   P= .052   P= .      P= .012

INTE_IDE  .2203     .6994     .1768     .5929     .3618     1.0000
          ( 47)     ( 47)     ( 47)     ( 47)     ( 47)     ( 47)
          P= .137   P= .000   P= .235   P= .000   P= .012   P= .

MOT_ACT   .6916     .1632     .5924     .2512     .8434     .3536
          ( 47)     ( 47)     ( 47)     ( 47)     ( 47)     ( 47)
          P= .000   P= .273   P= .000   P= .089   P= .000   P= .015

MOT_IDE   .1862     .6762     .1757     .6906     .3495     .7761
          ( 47)     ( 47)     ( 47)     ( 47)     ( 47)     ( 47)
          P= .210   P= .000   P= .237   P= .000   P= .016   P= .000
```

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

Appendix I

Correlation Coefficients

```
              MOT_ACT   MOT_IDE

CONS_ACT      .6916     .1862
             (  47)    (  47)
             P= .000   P= .210


CONS_IDE      .1632     .6762
             (  47)    (  47)
             P= .273   P= .000


IDEA_ACT      .5924     .1757
             (  47)    (  47)
             P= .000   P= .237


IDEA_IDE      .2512     .6906
             (  47)    (  47)
             P= .089   P= .000


INTE_ACT      .8434     .3495
             (  47)    (  47)
             P= .000   P= .016


INTE_IDE      .3536     .7761
             (  47)    (  47)
             P= .015   P= .000


MOT_ACT      1.0000     .3171
             (  47)    (  47)
             P= .      P= .030
```

Appendix J

Letter To Participants

Date

Letter of Purpose

Dear Participants,

I am a doctoral student at the Graduate School of Education and Psychology of Pepperdine University. I am conducting a research study to identify the organizational culture of the organization. The perceptions of constituents about their leaders' actual and ideal leadership attributes will be explored. The result of this study will depict crucial information to the company of the leadership attributes that would encourage employees to come together and co-learn and co-construct knowledge for mutual benefits; employees and organization. Feedback to the organization will "only" be done on an aggregate bases.

By completing the questionnaire, you are implying consent to participate voluntarily. There is no risk of your identity being revealed. A coding system will be utilized. The researcher will identify you only as a member of a team (1-6). For confidentiality, only the researcher will have access to your raw score. Under no circumstance will your raw data be revealed to anyone else other then the researcher himself. I personally guarantee that your personal identity will be protected at all cause.

This is a personal and family dream to complete a doctoral degree. Thank you so very much for participating. I may be contacted at 714-404-8159 cell phone.

Kind regards,

David Uata
Doctoral Student
Graduate School of Education and Psychology
Pepperdine University

Appendix K

Letter To Senior Managers Seeking Survey Approval

Date

To: Senior Manager
Fr: David Uata
Subj.: Seeking permission to survey five to six teams

Dear Senior Manager:

I am a doctoral student at Pepperdine University seeking to conduct an empirical study as a partial fulfillment of my degree. I am interested in surveying the perception of the members of their leaders' actual and ideal attributes that would encourage them to co-learn and co-construct knowledge for your organization.

This study will provide crucial information that can assist the organization strategize on how to maximize its' most competitive assets; the knowledge of employees.

There will be absolute security of confidentiality for the organization, as well as the employees, involved in the study.

Your approval of this survey will be much appreciated.

Kind regards,

David Uata
Doctoral Student
Graduate School of Education and Psychology
Pepperdine University

Appendix L

Letter of Appreciation Example

Date

Dear Participant:

I want to take this opportunity to thank you so much for making a dream come true for me and my family. Without your willingness and effort to participate in this survey, this project would never be completed.

May God bless you for your kind hearts.

Kind and sincere regards,

David Uata, Researcher
Doctoral Student
Graduate School of Education and Psychology
Pepperdine University

Appendix M

Human Subject Consideration

Student: _TEVITA (DAVE) TEVITA UATA._

Title of the Research Project: _SYNERGISTIC LEADERSHIP; A NEW LEADERSHIP PARADIGM FOR THE KNOWLEDGE BASED GLOBAL ECONOMY._

Chairperson: _DR. June Schmieder-Ramirez_ Date of Submission: _____

Guidelines:

1. If human subjects and or records of human subjects are utilized the researcher must assure that individual rights are protected.

2. Any study involving clients, patients, minors, prisoners, and/or the developmentally disabled either by participant observation, interview, survey, physical manipulation testing and/or treatment must include a consent form which must accompany this petition.

3. Data collection that involves consenting adult peers or anonymous record review need not include a written consent form unless required by the committee chair or Doctoral program committee.

4. The research proposal must address the following questions:
   A. Is participation voluntary?
   B. Will the participants be rewarded for participating?
   C. How will the information collected be handled to maintain confidentiality of individual's responses?
   D. What degree of physical risk will be involved? (no risk, minimal risk, moderate risk or considerable risk)
   E. What degree of emotional risk will be involved? (no risk, minimal risk, moderate risk or considerable risk)
   F. Are these risks specified on the consent form?
   G. Is there any use of deception in the study?

5. The chairperson may verify that the research project is exempt based upon the criteria specified in the Dissertation guidelines. Non-exempt research requires proposal review by the Doctoral program committee.

Approval by Chairperson

__✓__ Determination of Exemption or

__✓__ Forward to Doctoral program committee for review

signature   Date _3/20/02_
Signature of Chairperson

Doctoral program committee decision for non-exempt research studies:

__✓__ Approved   ____ Approved with changes requested

____ Approval not given. Decision date: _____

Signatures of committee members present (minimum of three)

_____   _signature_   _Edward Book_