Learning Organization Principles: The Impact on a Midwest State Government as Perceived by Its Employees

Rosalee Billingslea Rush

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LEARNING ORGANIZATION PRINCIPLES: THE IMPACT ON A MIDWEST STATE GOVERNMENT AS PERCEIVED BY ITS EMPLOYEES

by

Rosalee Billingslea Rush

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Doctor of Philosophy
Department of Educational Leadership, Research and Technology
Advisor: Walter L. Burt, Ph.D.

Western Michigan University
Kalamazoo, Michigan
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This study sought to determine the extent to which learning organization constructs influence performance in state government. The overarching purpose was to examine the relationship between Peter Senge’s five learning disciplines and organizational performance.

The study utilized an *ex post facto* survey design. The sample population was composed of supervisors and professional and administrative staff within the 19 agencies of a Midwestern state government. Participants were administered an instrument that asked them to rate their perception of the organization and its performance along seven dimensions of learning. Of the randomly selected 381 participants, 110 (or 28.9%) returned the survey instrument.

The Dimensions of a Learning Organization Questionnaire (Marsick & Watkins, 2003) was used to collect data on the selected population. To provide answers to the three hypotheses, an analysis of variance (ANOVA) was used to test the perception of learning and organizational performance among employee groups. A canonical correlation tested the learning organization constructs as predictors of performance. The 0.05 confidence level was used for determining statistical significance.
Findings in this study revealed that employees believe this Midwestern state government possesses the characteristics of a learning organization. There is a strong linear relationship between organizational learning and performance. Evidence suggests that within this state a high learning organization score resulted in a high organizational performance score. The study adds to the research on learning organizations by revealing that a manager’s perception of organizational learning may be influenced by the person’s relative position on the organizational chart, and the learning construct, empowerment, is a dominant contributor to organizational performance.

The findings in this study support prior research (Bales, 1993, Appelbaum, St.-Pierre, & Glavas, 1998) that suggests executive leadership and middle managers’ perception of learning may differ from others within the organization. Furthermore, middle managers are instrumental in helping to promote the interchange of ideas and supporting a culture of learning. Future research should explore performance and learning outcomes tied to a specific initiative, as well as examine the influence of age on the perception of the organization in terms of its capacity to learn and improve performance.
ACKNOWLEDGMENTS

“He who began a good work in me will see it through to completion.”

(Philippians 1:6 NIV)

This has been a journey of perseverance, dedication, and endurance, with many lessons learned along the way. I could not have made it through without the help of so many individuals. Thank you to my committee members, Dr. Burt, Dr. Shen, and Dr. Celestin, for carefully guiding me through this endeavor. Your wisdom, knowledge, and advice were immeasurable and extend beyond this research.

To my children, Dominic and Kayden, you are mommy’s pride and joy. You are my blessing, inspiration, legacy, and greatest accomplishments. I am expecting great things from each of you. Thanks for being patient and sharing mommy. I am all yours now. Mom, you are the wind beneath my wings. Darrlyn and Yvette, my beautiful sisters, “me and you must never part. We are of one heart.” Thanks for always being there to listen, laugh, cry, scream and speak when I could not. This is only the beginning. Our work is not done.

To all of my family, thank you for supporting and showing me the value and importance of family. To my spiritual family and angels, Elder and Mrs. Lartigue and Rosalyn Jones, thank you for planting numerous seeds, watering them, and interceding.

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Rosalee Billingslea Rush
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CHAPTER I

INTRODUCTION

Government is at a crossroads. This is particularly true for one Midwestern state government. This Midwestern state is losing its competitiveness and appeal to attract new and young talent. The state received negative ratings on the markers of personal income growth, unemployment rates, and efforts on expanding the “knowledge economy.” Furthermore, it is not viewed favorably on “quality of life” factors such as population trends, poverty, and crime. On political leadership, legislative pay-for-performance, and efficiency in government pay and benefits, the state receives thumbs down.

External and internal pressures are forcing government to streamline services. There is an urgent need to maximize human resources and collective knowledge to discover long-term strategies for operating more efficiently. Decisions made today will impact or influence generations to come. If we do not find a way to truly reinvent key industries within the state, it will reclaim its name as “the rustbelt capital of the world”. This will further weaken the state’s ability to compete nationally and globally, resulting in a loss of investments. A loss of investments will lead to a loss of business, which leads to a loss of people. No people, no talent; no talent, no businesses. It’s a reciprocal cycle.

The time is ripe to rethink government strategies and how government operates. State governments should be asking themselves, “What are we not doing right? And then acting on it?” (Tice, 2007, p. 66). To reinvent itself and create the foundation for future
economic prosperity, state government entities must place an emphasis on learning as an organization and develop its collective learning capacities. This includes discovering new ways of thinking, processing, and viewing its current situation and how to serve residents. Rowden (2001) stated, “Amid sometimes unpredictable, always uncertain, and highly turbulent business conditions, an organization’s capacity to learn may be the only true source of competitive advantage” (p. 12).

Purpose of Study

The purpose of this study is to examine the relationship between Peter Senge’s five learning organization principles and selected measures of success within state government agencies. The study will attempt to answer the following research question:
To what extent do employees utilize the five learning organizational principles of Senge in the management of their work-related responsibilities?

It is the goal of this study to determine the extent to which Senge’s (1990) learning organization framework helps state government perform at higher levels or achieve higher levels of success. More specifically, this study will provide answers to the following questions:

1. To what extent is state government in this Midwest state perceived by its employees as operating as a learning organization?

2. How do state employees perceive the level of their organizational performance?
3. To what extent is there a difference between employees’ perception of state government functioning as a learning organization and their perception of the organization’s performance?

Problem Statement

The Midwest state government examined in this study is comprised of 19 agencies that serve 83 counties. The state’s population is estimated at more than 9.9 million individuals according to the population estimates released by the U.S. Census Bureau on December 23, 2009. Its three largest income-producing industries are: manufacturing, tourism, and agriculture. The total number of workers in the state’s labor force is more than 5.6 million (State Profile, 2005).

Beautiful landscapes, an abundance of natural resources, and breathtaking scenery define this Midwest state. Historically, the state has been the home of increased economic opportunity with the birth of the automotive manufacturing industry as we know it and drug development companies such as Parke-Davis (now known as Pfizer). It has been recognized in previous years as being the state with the most new plants or expansion projects for three consecutive years in a row (2002–2005).

Unfortunately, eroding market shares in the automotive manufacturing sector, and negative perceptions of the state as an attractive place to live and/or work, have led to high unemployment rates and what many are calling a significant “brain drain” of young talent and knowledge leaving the state in droves. The state has failed to diversify its economic base; thusly, its economy has been heavily dependent on the automotive industry. Decline and shifts in this industry has greatly impacted the state’s economy on
numerous levels. As a result, economic opportunities are quickly diminishing as the state encounters obstacles attracting new business and talent as well as fostering the development of new industries.

State governments are faced with constant change involving downsizing or “rightsizing,” and an increasing demand to become more competitive nationally and globally, and more efficient. In a global economy focused on the knowledge worker, value added through intellect is simply the only effective strategy to compete. A state’s competitive edge and economic vitality is dependent upon its ability to develop and maintain a robust business climate. State government’s role is to influence those processes, systems, infrastructures, tools, and mechanisms within its control that produce a business friendly environment. Government entities cannot be so focused on the status quo that it is not in tune with new trends affecting the way businesses conduct transitions internally and externally. State and local government must learn to adapt if it wants to thrive in a changing economy.

Nambisan (2008) argues that government needs to focus on collaboration and less on agency structures to innovatively and successfully solve the problems and issues of the 21st century. “The problems faced by state and local government employees are not a lack of challenging or meaningful work. Rather, the problem . . . is the knowledge gap created by a decade of cuts and narrow thinking about government’s human capital” (Winter Commission Report, 1993, p. 141, as cited by Lynn, 2000, p. 56). Learning organization principles are levers government employees can utilize to continuously create or improve the tools and mechanisms that help produce a business friendly climate within the state.
“Give me a lever long enough and singlehandedly, I can change the world” (Archimedes, cited by Senge, 2007, p.12).

This study plans to investigate the presence of Peter Senge’s learning organization principles within state government. Does the application of the learning organization principles help the agency look, think, and act differently in regards to organizational culture and performance? This study will seek to determine the extent to which state employees perceive there is a relationship between Senge’s principles of learning organization and overall organization and individual performance.

Background of Problem

Research has shown that organizations and companies that invest significant time surveying their internal and external environments and applying mechanisms that allow them to quickly adjust or change to meet the environmental pressures and influences have a higher rate of success and sustainability. These organizations appear to be asking the right questions, challenging perceptions and status quo in an effort to be competitive. They examine actions, thoughts, perceptions, and mistakes, and turn many situations into learning opportunities. They are learning organizations. As Garvin (2000) stated, “The litmus test of a learning organization is that it seldom makes the same mistake twice” (p. 90).

Many studies of learning organization have sought to explain and define the characteristics and attributes of a learning organization. Other studies have examined the impact and effect of applying learning organization principles. This includes identifying the key processes and system constructs needed to create, develop, and sustain a learning
organization. A third set of studies examined the specific learning organization levers and tools and how they relate to overall organizational performance. More recent studies have examined constructs on how to measure the learning organization concepts in an organization (Kiedrowski, 2006; Marsick & Watkins, 1999; Moilanen, 2005; Templeton, Lewis, & Snyder, 2002).

Studies on the learning organization tend to focus mostly on private companies. There have been several case studies focused on the learning organization and the public sector, specifically government (Bales, 1993; Ford, 1997; McGrath, 2002). However, the majority of studies on government and learning focus on how to institutionalize learning in the public sector and why it is important or relevant to today’s economy (Dilworth, 1996; Osborne, 1993). Other studies focus on the barriers to learning within government bureaucracies. “Government today consists of a lot of very dedicated people trapped in bad systems—budget systems that provide incentives to waste money, personnel systems and civil service systems that are cumbersome and provide little incentives” (Osborne, 1993, p. 350). These studies overwhelmingly demonstrate how culture and political instability greatly influence learning, transfer of knowledge, or the lack thereof, in government agencies. These same studies also identify widely recognized and accepted competitive advantages that government as a learning organization would bring. These advantages include lean governments that are mission-driven, customer-driven, focused and results-oriented, leading to the ability to improve productivity and efficiency on a continual basis.

McGrath (2002) observed the presence of the learning organization principles within a local municipal government. The research proved that government agencies
possess the conceptual framework to operate as a learning organization. Whether these concepts or principles are actually being utilized and have a direct effect on government operations and performance remains an open question.

Focusing on continuous learning as a fundamental tool may prove instrumental in helping state government determine what knowledge or information is needed to be more effective and efficient now, and in the future; what demands or pressures will the global knowledge economy place on the public sector; what kinds of decisions, forces, and services will be encountered; or what needs exist that were not factors before?

Theoretical Framework

The theoretical grounding for this study is based on Peter Senge’s five disciplines of a learning organization. The goal of the learning organization is to produce change in the way in which individuals and organizations operate. Senge (1990) defines the learning organization as one “where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together” (p. 3). The five learning principles—personal mastery, team learning, mental models, shared vision and systems thinking—are necessary elements for organizations to grow, change, and continually learn (Figure 1). They are key components to an organization’s ability to expand its capacity to innovate and “re-create itself” for future success.
The hallmark of the learning organization is the emphasis on building and utilizing collective and continued knowledge of individuals to create and improve quality and performance within organizations. This knowledge helps individuals to:

1. Understand reality—What are the forces and structures that currently exist in the organization? How are these structures connected?

2. Understand and objectively analyze how organizational structures create or contribute to patterns of behavior that limit growth.

3. Discover the root of problems. To grow, organizations must begin to move away from quick fixes and seek out the root cause(s) of problems and identify solutions to redefine or recreate more effective systems and supporting structures (Fritz, 1999).
Senge’s principles identify ways of connecting all levels/members of an organization to attain success or desired outcomes. The five principles are guides to help change how individuals think and interact, thereby changing how organizations operate. These are levers/tools that individuals can utilize to navigate organizational structures and identify and explain recurring problems and conflict within organizations. When incorporated, Senge suggests, these principles help individuals make the “right” decisions that lead to greater organizational and personal performance (see Figure 2). In this conceptual model, employee use of the learning organization principles overlaps with organizational performance. Management’s beliefs and practice of the learning competencies will influence staffs’ use of the principles. When all levels of the organization begin to operate within the learning organization principles, there should be evidence of growth both organizationally and individually.

The issue of government in the 21st century requires a new framework and consensus among public officials and state government. Senge’s learning organization challenges the government to move away from a top-down, authoritarian structure to one that seeks to engage all its members in defining success and direction. The five learning principles provide a framework for government employees to effectively adapt to the constantly changing operating strategies and practices within state government. By applying the five principles, individuals will be equipped to influence groups, systems, people and the thinking of people into action. This will prove beneficial in helping government remain true to its core purpose and values while also identifying new ways of stimulating growth and performance.
Hypotheses of Study

This study will attempt to address the following hypotheses:

H1: Employees who perceive the state as a learning organization will score the organization high on organizational performance.

H2: Employees’ perception of organizational learning will differ among employee groups (age, classification/level, gender, education, ethnicity, and years of service).

H3: Employees’ perception of organizational performance will differ among employee groups.
H4: There is a statistically significant relationship between organizational learning and organizational performance.

Research Variables

A Likert-scale survey consisting of 19 questions measured the dependent variables of employees’ perception of a learning organization, self-reported use of the disciplines in state government, and their perception of organizational performance. For research question 1, the independent variables are employee classification, gender, education, years of service, ethnicity, and age. The dependent variable is the employee perception of government as a learning organization as obtained through the sum of learning as measured by the seven learning constructs evident in individual, team and organizational learning levels.

Research question 2 independent variables are age, gender, ethnicity, employee classification/group, years of service, and education. The dependent variable is employee perception of organizational performance as attained through the comprehensive score on performance measurements at the organizational level.

Research question 3 asks if whether the learning variables are predictive of organizational performance. The predictor variable set (covariates) is the learning organization constructs for the seven dimensions of a learning organization. The dependent (criterion) variable is organizational performance.
Research Design

This study employed a quantitative research design. Utilizing an *ex post facto* survey design, the investigator queried governmental employees along seven dimensions of the learning organization pertaining to systems thinking, team learning, personal mastery, mental models, and shared vision. Creswell (2003) suggested, “A survey design provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population” (p. 153).

Subjects were supervisors, managers, and professional and administrative staff randomly selected from among the 54,000 civil servants employed by this Midwest state. Data were collected over a 3-week period. Appropriate statistical software was utilized to conduct a canonical correlation analysis, comparison analysis, and ANOVA between the employee’s perception of a learning organization and the perceptions held by employees regarding the organization’s performance on the aforementioned learning domains.

Rationale

Increasing understanding of how state government can operate as a learning organization may lead to more entrepreneurial and effective initiatives, greater efficiency, and productivity within state government. There is minimum quantitative evidence supporting a state government as a learning organization (Bales, 1993; Betts & Holden, 2003; Brown & Brudney, 2003; Ford, 1997). Obtaining employee perspectives on learning and its correlations to organizational performance is important to identifying
ways to enhance organizational learning and techniques to address specific challenges facing the state.

Significance of Study

It is essential that state government be equipped to re-think, re-tool and redefine government (Ford, 1997; Friel, 2003; Osborne, 1993; Thompson & Riccucci, 1998). This includes how government organizes, designs, plans, and regulates programs serving the public. This study may help identify ways in which the five learning organization principles can help government generate new opportunities and thrive amidst significant changes in the global economy.

There is no pre-existing research measuring learning organization principles in state government. Sharman (2005) stated, “Assessment is a vital first step in the formation of a learning organization.” McGrath (2002) analyzed “systems of private sector learning organizations and how they are applicable to local municipal government.” Other studies concentrated on specific elements of learning organizations such as, leadership, mentoring, training, or culture. Ford (1997) conducted an examination of the type of leadership needed to transition government. Ford’s study produced a set of guidelines that could be utilized to transform a bureaucracy to the concept of a learning organization. Bales (1993) identified key developmental incidents of state government executives possessing the skills and abilities related to the learning organization so that the “executive develop a process in which government might be adapted to better meet the challenges of the 1990s.” Brown and Brudney (2003) explored
the effectiveness and limitations of information technology in promoting the learning organization in the public sector.

McGrath (2002) recommended that future research connect the learning organization principles with improvement or performance measures. Ford (1997) recommended future research should examine assessment techniques to measuring the learning organization.

Findings from this research could offer insight into morale concerns and issues or attitudes regarding public service responsibility (Brudney, Hebert, & Wright, 1999; Gilmour & Jensen, 1998). Furthermore, the study can have some implications on leadership and change on organizational learning (Ferdinand, 2004; Ford, 1997; Hennessey, 1998; Sharman, 2005.) This study will contribute significantly to the body of scholarly research by measuring learning in a government agency. What establishes significance of this research is that:

- it specifically applies to a state government;
- it evaluates perceptions at three employment levels within government, not just executive leadership;
- it looks at the five learning organization principles within government to attempt to tie these domains to organizational performance by its employees;
- it provides a link connecting learning with performance outcomes;
- it fills a void in the current literature on learning organizations and state government.

Results of this study may prove beneficial in identifying areas of improvement and focus during this vital time of transition. If the study’s results suggest that there is a
significant relationship between organizational learning and improved performance, it could possibly help shift the paradigm of how government operates. This study may help to identify what government is doing right and how to expand upon these elements (Brudney & Wright, 2002; Coe, 1999; Osborne, 1993). As a result, government may begin to seek out ways of working smarter versus working harder (Collins, 2005).

The literature has primarily focused on defining what a learning organization is, who’s learning, how they are learning, and the benefits of learning (Betts & Holden 2003; Kim, 1993). Furthermore, more recent studies have examined constructs on how to measure the learning organization principles within an organization (Kouzmin, Löffler, Klages, & Korac-Kakabadse, 1999; Marsick & Watkins, 2003). Interestingly, no one has actually measured this in a state government (McGrath, 2002; Kiedrowski, 2006). Brudney et al. (1999) measured reinvention and implementation efforts of the 1990s at state government agencies. There is little empirical research to support the argument that performance improvement is related to the adoption of practices associated with the learning organization concept (Ellinger, Yang, & Ellinger, 2000). Kiedrowski (2006) quantitatively assessed a Senge learning organization intervention to determine if it would result in improved employee satisfaction at a bank. Buckmaster (1999) argued that “future work ought to examine policy such as GPRA, the reliability of existing frameworks and its implications for learning and ultimately performance” (p. 195). Many studies explain or explore why the learning organization works, but few study the relationship between learning organization and performance improvement (Kaiser & Holton, 1998). The need for empirical research on this concept has been cited by

This research investigation intends to bridge the gap by measuring the extent to which employees within a Midwest state government believe the organization possesses the constructs of a learning organization; and whether learning organization systems are practiced and the impact it has on the organization’s performance as perceived by its employees.

Limitations of Study

Delimitation

The scope of this study focuses solely on Peter Senge’s definition of a learning organization and its five guiding principles as evidenced in a specific Midwest state government. Based on these specific definitions, one’s perceptions may be limited and narrow in scope.

Limitations

The purposive sampling identified decreases the generalization of the study findings. This study may not be generalizable to all state government entities. In addition, the study relied on individual self-reported rankings of individual and organizational learning and performance outcomes, which may skew or influence the scale of the survey. Although respondents were asked to rate their perceptions on learning in the organization,
there could be discrepancy and disagreement about the presence and application of the
learning opportunities among the levels of employees surveyed.

The utilization of a survey to collect data does not allow for probing of specific
phenomenon/issue or correlations found (Creswell, 2003). The survey produced a variety
of information that needs clarification. And finally, of necessity, this study was limited to
individuals who participated in the study and no inferences were made beyond individuals
who participated in the study.

Definition of Terms

The following terms, with a corresponding definition, are utilized throughout this
study:

*Learning Organization* An organization where people continually expand their
capacity to create the results they truly desire, where new
and expansive patterns of thinking are nurtured, where
collective aspiration is set free and where people are
continually learning how to learn together (Senge, 1990).

*Organizational Learning* The ability to translate and incorporate new knowledge and
learning into new ways of behaving and daily
organizational functions and practices (Kim, 1993).

*Personal Mastery* The discipline of continually clarifying and deepening our
personal vision, of focusing our energies, of developing
patience, and of seeing reality objectively (Senge, 1990).
**Team Learning**  
Starts with “dialogue,” the capacity of members of a team to suspend assumptions and enter into a genuine “thinking together.” A willingness to work with and learn from others in a group or team (Senge, 1990).

**Shared Vision**  
The skill of unearthing shared “pictures of the future” that foster genuine commitment and enrollment rather than compliance. This is the vision for the organization (Senge, 1990).

**Mental Models**  
Deeply ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action (Senge, 1990).

**Systems Thinking**  
Integrates all five disciplines, fusing them into a coherent body of theory and practice (Senge, 1990).
CHAPTER II

LITERATURE REVIEW

The major purpose of this inquiry was to describe the extent of learning within a Midwestern state government and to determine to what degree, if any, the state is perceived by its employees as operating as a learning organization on the individual and organizational levels. The theoretical literature provided the conceptual framework and was used to identify the variables within the study. The empirical literature examined government reinvention efforts, the link between strategic learning and organizational performance, and performance measurements of government and the learning organization. The literature reviewed sheds light on the following areas:

- performance measurement systems
- defining a learning organization
- defining the links between organizational learning and individual learning
- reports of projects and initiatives taken by specific government agencies; and
- the development of learning organization models and measurement instruments.

There is minimum research quantitatively assessing a state government as a learning organization.

This literature review examined how organizations learn. Several qualitative studies analyze specific agencies, technologies, or executives and managers within
government as they relate to the learning organization. The lack of empirically-based literature measuring state government as a learning organization makes a strong case for the purpose of this study.

Third-Stage Outline

What are the key challenges for government at present? How can government best meet these challenges? What is the future of government/public service? To answer these questions and explore learning within state governments, the literature outlined in Table 1 was reviewed.

There are many dimensions to learning dynamics in an organization, specifically government. The research outlined below help to demonstrate why a study measuring learning in government is important, timely and worth pursuing. The research provides historical information on government reinvention, the principles of a learning organization and government agencies. This literature was a critical component in defining who’s learning, the significance/benefits and importance of creating and sustaining a learning organization for long-term success and competitiveness, and how to measure a learning organization. Systems used to promote learning within organizations were identified as well as leading theorist influencing Senge’s learning organization concept. The missing link in the literature is actually measuring learning, individual and organizational, in a government agency. This includes identifying the connection between learning and organizational improvement.
### Table 1

**Research Topic: Measuring Learning in a State Government Agency**

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<th>Major Topic</th>
<th>Subtopics / Points of Interest</th>
<th>References</th>
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<tbody>
<tr>
<td>1. Learning Organization – How has learning been defined?</td>
<td>- Cognitive vs. behavioral&lt;br&gt;- Strategic learning&lt;br&gt;- Single-loop (adaptive) vs. double-loop (generative)&lt;br&gt;- Interpretive vs. analytic</td>
<td>(Appelbaum, St. Pierre, &amp; Glavas, 1998; Argyis &amp; Schon, 1996; Crossan, Lane &amp; White, 1999; Henderson, Sussman, &amp; Thomas, 2001; Mahler, 1997; Miner &amp; Mezias, 1996; Senge, 1990; Thompson, 1996)</td>
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<td>3. Measuring the Learning Organization</td>
<td>- When is learning valuable?&lt;br&gt;- Change vs. learning&lt;br&gt;- Key learning processes&lt;br&gt;- Change in organizational climate and culture</td>
<td>(Brown &amp; Brudney, 2003; Coe, 1999; Fiol &amp; Lyles, 1985; Garvin, 1994; Miner &amp; Mezias, 1996; Marsick &amp; Watkins, 1999; O’Neil, 2003; Sussman, 2006; Templeton, Lewis &amp; Snyder, 2002; Thompson, 1996; Yang, 2003)</td>
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<tr>
<td>4. Learning Organization &amp; Government</td>
<td>- Competitive advantages&lt;br&gt;- Barriers to learning&lt;br&gt;- Institutionalizing learning (how to?)&lt;br&gt;- Influence of culture and leadership&lt;br&gt;- Social disorganization&lt;br&gt;- Policy and program implementation</td>
<td>(Bales, 1993; Barth &amp; Bartenstein, 1998; Betts &amp; Holden, 2003; Brown &amp; Brudney, 2003; Corbett &amp; Kenny, 2001; Dilworth, 1996; Ferdinand, 2004; McGrath, 2002; Tice, 2007)</td>
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<td>5. 21st Century Government</td>
<td>- Reinvention&lt;br&gt;- Challenges&lt;br&gt;- Performance assessment&lt;br&gt;- Accountability&lt;br&gt;- Focus on people</td>
<td>(Allen, 1996; Bales, 1993; Botcheva, White, &amp; Huffman, 2002; Buckmaster, 1999; Buhrer, 2002; Coe, 1999; Dusenbury, 2000; Ebrahim, 2005; Eskildsen, Dahlgard &amp; Norgaard, 1999; Gilmour &amp; Jensen, 1998; Heinrich, 2002; Hennessey, Jr., 1998; Ingraham, Selden, &amp; Moynihan, 2000; Kloot &amp; Martin, 2000; Kouzmin, Loffler, Klages &amp; Korac-Kakabadse, 1999; Liner &amp; Vinson, 1999; Magd &amp; Curry, 2003; Mayne, 2007; Morley, Hatry, &amp; Vinson, 2001; Osborne, 1993; Parson, 2007)</td>
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Table 1—Continued

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<th>References</th>
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</table>
▪ Direct observations of practice  
▪ Case studies | (Corbett & Kenny, 2001; Garvin, 1994; Marsick & Watkins, 1999; McGrath, 2002; O’Neil, 2003; Templeton, Lewis, & Snyder, 2002; Yang, 2003) |
| 7. Promoting Learning in Organizations | ▪ Continuous improvement  
▪ Alignment between organization’s core values and future goals  
▪ Aligning people with organization’s collective vision and goal(s)  
▪ Connecting an organization’s purpose & vision with business strategy  
▪ Knowledge vs. learning vs. quality | (Allee, 1997; Carlson, 1996; Meister, 1998; Collins, 2005; Demings, 1994; Fritz, 1999; Owens & Valesky, 2007) |

Reinventing Government

The federal government is facing a deficit of $984 billion (www.nasdaq.com). The state has reported a budgetary shortfall of $1.3 billion (2009). Its economy is suffering from massive mortgage foreclosures, the fall of major automakers, questionable business investments, and financial responsibility. The fallout of these decisions is resulting in higher costs and taxes for citizens. Solutions for change seem to come with an additional price or expense to the average tax payer. Research shows people are dissatisfied and frustrated with government.

The public is crying out for change. It is precisely this cry for change that many attribute to the historical election of President Barack Obama in the 2008 election against Senator John McCain. The slogan “Yes, we can” meant many things for many people. Yes, we can alter how government operates and responds to the public. Yes, we can
humanize government services and solve problems without creating bigger problems. Finally, yes, we can make government more productive and bring it into the 21st century paradigm of doing business. The existing literature regarding government reform focuses on government’s operational inefficiencies, lack of problem-solving capacity and leadership influence.

*Empirical Research*

The issue of government reform is not a new topic. Federal national government reform efforts date back to the early 1900s. The federal Taft Commission (1912) set forth recommendations for management reform in the federal government. In the 1990s, the National Performance Review (NPR) advocated a shift in government from the traditional top-down bureaucracy to an entrepreneurial government that empowers citizens from the bottom-up (Gore, 1993, pp. 23-24). The premise of an entrepreneurial government structure is empowerment of people. It is a government that serves the interest of its citizens. An entrepreneurial government positions itself to be more competitive.

Proponents of reinvention suggest government is operating in an outdated mode (Osborne, 1993). Services and standards are mandated with insufficient budgets provided to deliver the services. Cumbersome bureaucratic policies and procedures hinder effective and efficient operational standards. The problems that plague today’s society are more complex and different than those of the past. Government cannot continue to try to fix today’s problems with yesterday’s solutions.
Reform at the state government level is essential because it is at this level that domestic programs are implemented and services delivered (Brudney et al., 1999; Coggburn & Schneider, 2003). State-funded government programs have the most direct impact on citizens. Success of these programs is a reflection of state government capability and knowledge capacity (Bowling & Wright, 1998). State government reinvention efforts focus on personnel policy deregulation and changing the culture of government agencies.

Reinvention involves implementing initiatives not programs. Overall, the principal conclusion is that state governments have adopted many of the reinvention strategies but there is not a concerted effort of widespread adoption. State governments have not embraced all of the strategies associated with the reinvention concepts (Hennessey, 1998). This is apparent in documented performance measure outcomes. Second, leadership must take an active role in reinvention efforts. Previous research found leadership has a direct impact on reinvention efforts linking management capacity to agency performance (Bales, 1993; Dekker & Hansen, 2004).

Hennessy (1998) examined the role of leadership in the “reinvention of government” in nine federal government agencies. The findings reported that the most effective leaders were successful in fostering and sustaining change and an organizational culture that supports change. A key finding linked reinvention efforts to the quality of leadership and the involvement of efforts of individuals at every level of the organization. Improved processes and performance were results of collaboration and support.

These studies only involved management and executive level input. Reinvention involves the entire organization. Individuals must be willing and supported in their
change initiatives. To fully reinvent government, agencies need to evaluate and assess the current skills and expertise of its entire labor force. This would help to identify and fill applicable knowledge gaps. Reinvention requires learning and rethinking at all employee levels to increase individual and collective knowledge capacity to respond to government’s rapidly changing environment. This study examines learning at all levels of state government. Reinvention of state government would offer the most benefit to citizens and government officials as this is the level where the design, synergy, and performance outcomes of programs and services are leveraged most.

To understand how organizational learning can help reinvent government, it is essential to understand and review the literature on learning organizations.

Learning Organization

All organizations learn, whether intentionally or unintentionally. Learning is a necessity for organizations to survive. Some companies practice action learning, where they are actively seeking out new and better ways of conducting their business on a continual basis (Garvin, 1994). Others take a passive approach to learning. Either way, learning takes place in every company or organization.

The central focus of this study was to measure the learning organization concepts within a Midwest state government. Previous research reported government has the systems and operational components to operate as a learning organization (Bales, 1993; Brown & Brudney, 2003; McGrath, 2002). This study is based on the premise that state government practices and applies learning organization principles. This section of the literature review will provide an overview of what a learning organization is as well as a
basic understanding of the characteristics associated with it. Specifically, the following topics will be reviewed:

- What is a learning organization?
- History of learning organization definitions.
- Conceptual and empirical research on how organizations learn.
- Empirical research on the learning organization implications for government/public sector.

21st Century Learning

The 21st century has ushered in the era of the global knowledge economy and worker. This is an era where change is constant and unavoidable. To survive and compete in this global economy, all organizations, including government, must encourage, support, and build learning environments. Friedman (2006) stated:

In a globally integrated economy, our workers will get paid a premium only if they or their firms offer a uniquely innovative product or service, which demands a skilled and creative labor force to conceive, design, market and manufacture and a labor force that is constantly able to continue learning. (p. A33)

Tucker (2006) explained:

The 21st Century is an era in which comfort with ideas and abstractions is the passport to a good job, in which creativity and innovation are the key to the good life and in which the constant ability to learn how to learn will be the only security you have. (as cited in Friedman, 2006, p. A33)

Organizations that embrace learning and change have been termed “learning organizations.” Peter Senge (1990), in his book *The Fifth Discipline*, described a learning organization as a place “where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured,
where collective aspiration is set free and where people are continually learning how to learn together” (p. 3). According to Senge, there are five key components to achieving this: systems thinking, personal mastery, mental models, shared vision, and team learning. Similarly, Ikuhuro Nonaka defined learning organizations as “places where inventing new knowledge is not a specialized action . . . it is a way of being indeed, a way of being, in which everyone is a knowledge worker” (Garvin, 1994, p. 19). Whyte (1994) summarizes it as:

an organization that is as much concerned with what it serves as what it is, as much attentive to the greater world as the small world it has become, as much trying to learn from the exquisite patterns that inform that greater world as trying to impose its own pattern on something already complete. (as cited in Lambert et al., 2002, p. 57)

Organizational learning is facilitated through the integration of individual learning into everyday practices. Learning is a lifelong process. It is something that is practiced and studied continuously. It is both cognitive and behavioral. Learning is both a personal and professional growth experience. Learning organizations work to not only improve an organization through the dialogue and interaction of its people, but also to grow, challenge, and change how people think in an organization. “Organizations work the way they work, ultimately, because of how we think and how we interact” (Senge, 1990, p. xiv).

The previous discussion implies there is a difference between the terms learning organization and organizational learning. The learning organization describes the systems, principles and characteristics needed to facilitate learning and are produced as a collective entity. Organizational learning refers to how learning is achieved and occurs. It involves examining the entire system. Organizational learning is a byproduct of the
learning organization. This study focuses on both the systems needed as well as how the organization uses the skills and available resources to build and utilize knowledge to collectively enhance performance outcomes. Thus, for this study, the terms organizational learning and learning organization are used interchangeably.

**Learning Organization Theories**

*What does it mean to learn?* Organizations have been defined as entities that learn through individuals. Organizational learning takes place when individual learning is absorbed and integrated into the organization’s memory. Kim (1993) argues that organizational learning is a collective process. “Organizations can learn independent of any specific individual, but not independent of all individuals” (p. 37).

Leading research on the current focus of organizational research is centered on the work of Chris Argyris and Donald Schon. Schon (1983) identified two levels/stages of learning: single and double loop. These two stages have also been labeled adaptive learning versus generative learning. In single-loop learning, decisions are based solely on observation. There is no new thinking of processes. The sole purpose is to optimize an already established method. Organizations adapt their behaviors to fit the current processes or decisions. There is no correction of inefficiencies or errors found in the processes. Double-loop learning involves modification and adjustment to overall organization rules and norms. It influences and has a long-term impact on the organization as a whole (Miner & Mezias, 1996; Murray & Moses, 2005). In double-loop learning, existing knowledge is challenged and individuals or teams rethink existing methods that have been proven inadequate.
J. K. Eskildsen et al. (1999) introduced a third level of learning—triple-loop. Triple-loop learning calls for a complete change or renewal in thinking and actions when making decisions. It involves reflection, feedback and learning something new to achieve shared objectives. At this level, learning is institutionalized through the integration and incorporation of new skills, and learning and process into the organization’s daily operations. Double and triple-loop learning produce new actions and processes (see Appendix A).

Triple-loop learning has also been referred to as strategic learning. Strategic learning generates the learning of new ideas, meanings, and processes from past and current experiences. This higher-level learning maximizes an organization’s ability to learn over time by storing and using knowledge for future situations and events. Thomas, Sussman, and Henderson (2001) systematically linked strategic learning to organizational learning and knowledge management.

Total Quality Management

Edward Demings (1994) introduced the concept of total quality management (TQM) to improve performance and quality of service in all areas of an organization. TQM connects people to the organization’s strategic goals and outcomes by incorporating a plan-do-study-act learning model and encouraging individuals to engage and share learning within the organization. This learning model closely resembles Argyris and Schon’s double-loop learning and Eskildsen’s triple loop learning cycles. Demings emphasized knowledge and continuous learning as the foundation for growing companies and defining the future success of an organization. He termed this “profound
knowledge”—the knowledge needed for the transformation of an individual. “The individual, transformed, will perceive new meaning to his life, events, to numbers, to interactions between people” (Demings, 1994, p. 92). The basic concept underlying TQM is creating a constancy of purpose, collaboration among colleagues and desire to address and solve a problem leads to continued growth, success, and innovation. Total quality management focuses on using knowledge and learning to align people to organization’s strategic goals and actions. It is not a tool to simply solve problems.

Robert Fritz (1999) drew upon Demings’ TQM principals while addressing an organization’s capacity to grow given numerous competing resources and limitations. Fritz argued an organization is successfully positioned for growth when its members can effectively define their present state, what and where the organization would like to be positioned in the future, and its plans for achieving the future goal(s). In essence, there needs to be a clear understanding of the organization’s current reality, desired reality, and where the organization is along this continuum (p. 30).

Change strategies are focused on processes to resolve current problems and perceived inadequacies. Change is often temporary when it focuses solely on resolving problems, without considering the impact or influence on other areas within the organization. Learning is limited to fixing the specific problem, not the overall organization structure or processes causing or contributing to the problem. Thus, the organization is prevented from creating or achieving its desired goal because it is stuck in reactive problem-solving. Fritz referred to this as structural tension, conflict, and oscillation.
To foster organizational learning members of an organization must use their knowledge to examine, rethink, and redesign inadequate organizational structures and processes as a whole. Fritz, like Demings, argued learning is not used to fix specific problems, but to create systems to help the organization become results-oriented. Demings’ TQM and Fritz’s “Path of least resistance” take into account the learning curve, growth limits and organizational adaptability individuals need to analyze and determine how new learning can be best utilized to maximize results, overall organizational effectiveness, and overarching purpose.

Peter Senge’s (1990) learning organization framework is situated between the double- and triple-loop learning levels, total quality management concepts and structural tension and conflict. The five learning disciplines encourage discovery and exploitation of daily routines, practices, and strategizing for the future. Discovery emphasizes thinking, acting, reflecting, and teaching others while individually learning to view the system as a whole, made of many interconnected parts. Senge’s learning organization concepts further highlights the importance of learning that supports and links all members, units, departments, and divisions within an organization. Each plays an equal valuable role in aligning strategic initiatives and actions to not only grow an organization, but help it achieve its defined form of greatness.

The study of organizational learning continues to evolve. In recent years, there has been increased interest in how government and public sector agencies can use learning to create communities of practice to improve effectiveness and performance.
Definitions of Learning

The greatest asset of any organization or company is the collective intelligence of its employees. Only when individual knowledge becomes part of the organization’s collective knowledge does it improve performance and productivity. Thus, it is critical that organizations promote learning and discover best ways to use it effectively (Sergiovanni & Starratt, 2007).

In reviewing the literature on learning organizations, several definitions were discovered. Although each definition is distinct, the underlying theme or ideology is similar. A learning organization is one where knowledge is constructed together, based upon previous and current experiences and contexts, ideas are shared, assumptions questioned, and action is required. It is a place of continuous learning that results in a change in behavior, attitude, and organizational processes. An essential element of a learning organization is its ability to store new knowledge in the organization’s memory thereby “institutionalizing” it. It becomes part of the organization’s core operations practices, norms, and culture. “Individuals learn through the activation and updating of their memories while organizations learn through change in the culture” (Kline & Saunders, 1998, p. 23).

Table 2 presents 26 unique definitions of organizational learning as they were developed in 29 major works (McGrath, 2002).

Researchers continue to build upon the definitions of learning organizations as presented in the above chart. The definitions are applied to various industries from academia to the health/medical industry to private companies to public entities.
# Table 2

**Major Theorists’ Definitions of Organizational Learning**

<table>
<thead>
<tr>
<th>Date</th>
<th>Theorist</th>
<th>Definition</th>
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<tbody>
<tr>
<td>1963</td>
<td>Cyert &amp; March</td>
<td>Organizational learning is an adaptive process through which firms respond to environmental changes by re-adjusting their goals, attention rules, and service rules. Organizations change their goals, shift their attention, and revise their procedures for search as a function of their experience.</td>
</tr>
<tr>
<td>1965</td>
<td>Cangelosi &amp; Dill</td>
<td>Organizational learning is a sporadic, stepwise, adaptive process that is the product of interactions among three kinds of stress, generating both individual and organizational level outcomes.</td>
</tr>
<tr>
<td>1969</td>
<td>Simon</td>
<td>Organizational learning is the growing insight and successful restructuring of organizational problems by individuals reflected in the structural elements and outcomes of the organization itself. Learning consists of changes in states of knowledge and organizational outcomes.</td>
</tr>
<tr>
<td>1974</td>
<td>Duncan</td>
<td>Organizational learning is a process by which subunits search for, collect, and use information about the environment to make and execute effective decisions. The process includes using different structures with the goals of adapting to the environmental uncertainty, stability, pressures, and changes.</td>
</tr>
<tr>
<td>1976</td>
<td>March &amp; Olsen</td>
<td>Organizational learning is a process through which organizations adapt their behavior in terms of their experience. They modify their understandings in a way that is intendedly adaptive. In the learning process, actors impose order, attribute meaning, and provide explanations to make sense of experience under conditions of ambiguity.</td>
</tr>
<tr>
<td>1978</td>
<td>Argyris &amp; Schon</td>
<td>A learning organization is an organization in which its members detect error or anomaly and correct it by restructuring organizational theory of action (the norms, assumptions and strategies inherent in collective practices) and by encoding and embedding the results of their inquiry in organizational maps and images.</td>
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<tr>
<td>1978</td>
<td>Duncan &amp; Weiss</td>
<td>Organizational learning is the process within the organization by which knowledge about action-outcome relationships and the effects of the environment on them are developed. Learning is linked with sense-making processes, which are interpretive routines to detect and correct problems.</td>
</tr>
<tr>
<td>1980</td>
<td>Miller &amp; Friesen</td>
<td>Organizational adaptation is a process through which modifications in the evolutionary direction of the mutually reinforcing organizational elements of strategy, structure, and environment extrapolate past trends.</td>
</tr>
<tr>
<td>1981</td>
<td>Hedberg</td>
<td>A learning organization is an organization in which members acquire and process information through interaction with their environments in order to increase their understanding of reality by observing the results of their acts. Unlearning is the process through which members discard knowledge, making way for new responses and mental maps. Unlearning is accompanied by relearning (i.e., making new connections between stimuli and responses and modifying cognitive maps).</td>
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<tr>
<td>Date</td>
<td>Theorist</td>
<td>Definition</td>
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<tr>
<td>1982</td>
<td>Chakravarthy</td>
<td>Organizational adaptation is the continuous process through which the firm is fitted more particularly for existence under the conditions of its changing environment. Adaptation is the primary purpose of strategic management.</td>
</tr>
<tr>
<td>1982</td>
<td>Meyer</td>
<td>Organizational adaptation is a process of selection, interpretation, and response to feedback that maps environmental attributes into theories of action encoded in prevailing organizational strategies and ideologies.</td>
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<tr>
<td>1984</td>
<td>Daft &amp; Weick</td>
<td>See Duncan &amp; Weiss (1978)</td>
</tr>
<tr>
<td>1985</td>
<td>Fiol &amp; Lyles</td>
<td>A learning organization is an organization that is in the process of developing insights, knowledge and associations between past actions, the effectiveness of those actions, and future actions. Adaptation is the ability to make incremental adjustments as a result of environmental changes, goal structure changes, or other changes.</td>
</tr>
<tr>
<td>1988</td>
<td>Levitt &amp; March</td>
<td>Organization learning is a routine-based, history dependent, target-oriented process through which subunits encode inferences from history into routines that guide behavior.</td>
</tr>
<tr>
<td>1990</td>
<td>Senge</td>
<td>A learning organization is an organization that is continually expanding its capacity to create its future. Adaptive learning (survival learning joined with ‘generative learning’ – learning that enhances our capacity to create.</td>
</tr>
<tr>
<td>1991</td>
<td>Huber</td>
<td>Organizational learning is the processing of information that changes the range of the organization’s potential behaviors; learning involves acquiring of knowledge that is recognized as potentially useful to the organization.</td>
</tr>
<tr>
<td>1993</td>
<td>Kim</td>
<td>An organization that increases its capacity to take effective action.</td>
</tr>
<tr>
<td>1993</td>
<td>Morris</td>
<td>A learning organization is an organization that facilitates the learning of all its members and continuously transforms itself.</td>
</tr>
<tr>
<td>1993</td>
<td>Watkins &amp; Marsick</td>
<td>A learning organization is one that learns continuously and transforms itself; learning takes place in individuals, teams and the organization; learning is continuous, strategic, integrated with work; learning results in changes in knowledge, beliefs, and behaviors.</td>
</tr>
<tr>
<td>1993</td>
<td>Weick &amp; Roberts</td>
<td>A learning organization consists of interrelating actions of individuals, that is their ‘heedful interrelation’ which results in a ‘collective mind.’</td>
</tr>
<tr>
<td>1994</td>
<td>Finger &amp; Woods</td>
<td>Organizational learning means the active promotion of learning activities within a given organization or organizational subunit. The perspective is to actively foster change and adapt to changes that have taken place outside of the organization.</td>
</tr>
<tr>
<td>1995</td>
<td>Nevis, DiBelle &amp; Gould</td>
<td>Organizational learning is the capacity or processes within an organization to maintain or improve performance based on experience.</td>
</tr>
<tr>
<td>1995</td>
<td>Thompson</td>
<td>A learning organization is the acquisition of organizational knowledge to provide the foundation for rapid, dramatic organizational change – a fundamental requirement for organizational success.</td>
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<thead>
<tr>
<th>Date</th>
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<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>1998</td>
<td>Kline &amp; Saunders</td>
<td>An organization that learns on its own, quite apart from the many individual learning that will also take place within it.</td>
</tr>
<tr>
<td>1999</td>
<td>Crossan, Lane &amp; White</td>
<td>Organizational learning involves a tension between assimilating new learning (exploration) and using what has been learned (exploitation); is multi-level (individual, group and organization); is linked by social and psychological processes; intuiting, interpreting, integrating, and institutionalizing; and cognition affects action.</td>
</tr>
<tr>
<td>1999</td>
<td>Levitt</td>
<td>Organizational learning is the encoding of inferences from history into routines that guide behavior. Routines include forms, rules, and procedures around which organization are constructed and through which they operate and the structuring of beliefs, frameworks, paradigms, and cultures.</td>
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(Retrieved and adapted from the work of Victoria J. McGrath, 2002)

Evaluation of each definition reveals that a learning organization is “a collection of interconnected, interdependent subsystems, all of which continuously affect one another. . . . Organizational learning requires examining and working with the entire system” (Bennett & O’Brien, 1994, p. 41). The underlying premise of a learning organization is its ability to acquire new knowledge from external environments, transfer and share knowledge, and take action—whether it means adapting or changing systems or course (Buhler, 2002).

**Government/Public Sector as a Learning Organization**

The learning organization concept is about more than simply change. There can be several change initiatives without learning occurring (Fiol & Lyles, 1985). The arguments for creating a government that operates as a learning organization are numerous. First, as summarized by Lynn (2000), government’s institutional capacity and sustainability is a direct result of a knowledgeable workforce. Government should invest in infrastructures
and cultures that support continual learning processes and activities. Second, it is argued that government as a learning organization will produce more than new programs and initiatives. A reflective and critical look will be taken at social problems and public policy with an attempt to discover new ways of addressing and delivering services (Bales, 1993; Betts & Holden, 2003; Brown & Brudney, 2003). Critical reflection and learning would increase the government’s problem solving skills and capability (Dilworth, 1996). This would perhaps lead to programs that have a greater widespread impact on the larger population, addressing issues on multi-levels. Third, it has been argued that government is unable to keep up with its private counterparts when it comes to adaptability and use of evolving technology. Therefore, a workforce that is constantly learning will increase government agencies’ ability to respond quickly to challenges and opportunities, adapt, reframe, and keep up with rapid change and frequent organizational restructuring (Lynn, 2000). Finally, the traditional bureaucratic structure is insufficient for the current times. A more entrepreneurial government that promotes cross-collaboration may yield increased productivity and efficiency, and responsiveness to citizens. Learning organizations promote team learning, collaboration, and a higher-level thinking.

There are several barriers that impede governments from serving as a learning organization. According to Mahler (1997), learning must be part of the organization’s culture. The culture must have a tolerance for risk and failure and a commitment to learn from mistakes. First of all, government bureaucracy has a top-down structure with all decisions made by top-level executives. Secondly, leadership plays a critical role of creating and supporting a learning culture. State governments are comprised of several agencies with different leadership, each with its own way of doing things. Each agency
has different processes and ways of communicating and operating. Some departments are more “results-oriented” while others are “bureaucratic.” According to Argyris and Schon (1996) and Senge (1990), the constant change in political leadership of government negatively impacts the transfer and institutionalization of knowledge. Dekker and Hansen (2004) argued this notion based upon their empirical research of the Swedish government. In this regard, politics was found to either hinder or facilitate learning in the public sector depending on the characteristics of the political process. Finally, organizational learning is a collective process that is quite atypical of governments as this researcher learned while working for a government agency. This large governmental institution operated in silos quite analogous to single-loop learning.

Research studies have shown that federal agencies possess the frameworks required to operate as a learning organization (Bales, 1993). Government as a learning organization is more than skills development, it is a paradigm shift in terms of how government operates and perceived by its employees and customers. Many studies have focused on the development of instruments to appropriately measure learning and link individual and collective learning to organizational performance (Marsick & Watkins, 1999; O’Neil, 2003; Sussman, 2006; Templeton et al., 2002; Thompson, 1996). Other studies have focused on validating those instruments (Yang, 2003).

Performance Measurement in Government

Research suggests outcome-based performance measurement, or measuring for results, can be used to help restore public confidence in government and enhance the quality of services (Osborne, 1993).
Lack of trust and confidence in government is at an all time high. According to a poll taken in 2007, more than 75% of Americans are dissatisfied with government services (Fram & Tompson, 2007). More specifically, 76% of this Midwest state’s residents believe it is on the wrong track (Hornbeck & Cain, 2007). Citizens are pushing to be recognized as customers and clients with a viable voice. They (citizens) want to know what they are getting for their tax dollars. Also, questions are being raised as to whether tax sponsored public programs and services are truly benefiting the intended beneficiaries (Mayne, 2007).

Most government organizations measure performance by monitoring and evaluating output and input information, such as the number of clients served, quantity of services or programs, etc. Although this information is important, it does not identify direct benefit or impact on clients/customers. According to Morley et al. (2001), “Such statistics provide administrative information about programs, but not about the program’s results.”

The fundamental role of performance measurement is to improve citizens’ quality of life by providing better services more effectively (Morley et al., 2001). “Performance measurement systems are mechanisms to guide an organization toward achieving its purpose” (Ziebel & DeCoster, 1991, as cited by Buckmaster, 1999, p. 187).

As one example of a public program and the creation of such performance measurement systems, in 1982, the federal government established the Job Training Partnership Act (JTPA), a $5 million federal employment and training program. To address concerns about how local officials were exercising discretion in the distribution and management of program money, the JTPA performance standards system was
implemented (Heinrich, 2002). “The JTPA performance standards system, described by Barnow (2000, p. 119) as one of the “pioneers in performance measurement,” was a prominent example of performance accountability in this era of decentralization” (Heinrich, 2002, p. 713). According to Heinrich, this system was unique and significant because it was one of the first to:

1. focus performance measures on program outcomes;
2. link measures of program performance across multiple levels of government; and
3. include financial incentives for program managers based on evaluations of organization objectives (outcomes).

Studies of the JTPA program prompted further discussion in how to improve performance measures in public programs, including the use of evaluative and results-oriented approach to performance measurement (Holzer & Kloby, 2005). Utilizing performance measurement in government reemerged during the early 1990s with such works as the 1993 National Performance Review and Osborne’s (1993) article entitled, “Reinventing Government.” As a result, the federal government instituted outcome measurement into its practices and processes. Federal agencies have cited improved performance and positive influence on decision-making and budgetary planning as benefits of taking this approach. Given this positive assessment, there are still unanswered questions as to whether formal measurement of outcomes should be required by state governments.
**Defining Outcome Measurement**

In 1993, the federal government enacted the Government Performance and Results Act (GPRA). The GPRA established the foundation for strategic planning and performance measurement in the federal government. The Act ensures that the federal government focuses programs on performance. According to the Government Accountability Office Web site:

> It shifted the focus of government decision making and accountability away from a preoccupation with the activities that are undertaken—such as grants dispensed or inspections made—to a focus on the results of those activities such as real gains in employability, safety, responsiveness or program quality.

Overall, federal agencies are now required to develop multi-year strategic plans, annual performance plans and reports. The GPRA is just one example of outcome measurement.

Outcome measurement is examining and evaluating end results of an activity, input or output. It’s evaluating changes in organizations or individuals as a result of a specific program. Simply stated, outcome measurement is “a systemic way to assess the extent to which a program has achieved its intended results” (The Evaluation Forum, 2000, p. 9, as cited by Compassion Capital National Resource Center, n.d.).

**Advantages of Utilizing Outcome Measurement**

Outcome measurement is a long-term process that requires observation, reflexivity, feedback, and evaluation. It is a tool that can be used to increase or provide political and professional accountability in state government by requiring agencies and decision makers to demonstrate they have achieved specified goals. Outcome measurement can also serve as a resource to inform decision-makers about program
effectiveness and alternatives. When used properly, outcome measurement can serve as a tool to help restore public trust and confidence in government.

Policy is driven by data-driven analysis of problems and potential solutions (Malen & Knapp, 1997). Collecting and analyzing pertinent and reliable data is the cornerstone of outcome measurement. These data are used to measure progress, adjust or redesign programs, shape strategic direction, or create new programs and initiatives.

The quality of programs may be improved because all participants have clear direction and understanding of the program and what the intended effects and outcomes of the programs services are. Programs and services are constantly observed and reviewed over time. Outcome measurement improves the quality of public programs and services through the encouragement and facilitation of double-loop learning. In double-loop learning “decisions are based on the rethinking of existing competencies/methods which has proved inadequate. Here existing knowledge is challenged” (Eskildsen et al., 1999, p. S525). This type of learning is closely associated with continuous quality improvement in total quality management and business excellence. Double-loop learning requires feedback, observation, and reflection on decisions, connecting the detection of errors not only to outlined strategies and assumptions, but to the very norms which define effective performance (Buckmaster, 1999).

Implementing formal outcome measurements holds organizations and individuals accountable to specific outcomes. Accountability starts with leadership. Strong leadership that communicates and reinforces the agency’s vision and mission helps to create and maintain organizational order. It keeps everyone focused on the goals of the organization. “Too often however, public sector strategic planning is an event—or worse, just a
An agency prepares a strategic plan to meet executive or legislative mandates but does not use the plan to direct agency activities” (Dusenbury, 2000). Formal outcome measurement will require state government leadership to present a coherent and detailed vision and mission communicated in a well developed strategic plan that outlines overall organizational goals and strategies for achieving them. Outcome-based performance measurement forces leadership and agencies to act upon and revisit strategies and report how they are working. “The strategic plan defines the performance to be measured, while performance measurement provides the feedback that keeps the strategic plan on target” (Dusenbury, 2000).

Formal outcome measurement will also cause leadership to communicate with and support members at all levels of the organization. Individuals in leadership roles will be required to effectively communicate roles and responsibilities of each organizational unit and member as it relates to achieving the organizational goal. Organizational members will be informed of what is expected of them and how their performance and the programs and services which they administer will be evaluated. Since there is an element of personal accountability, individuals may feel empowered to not only identify areas where attention is needed, but to act to resolve any problems. This may increase productivity and encourage a sense of ownership which may cause individuals to take a personal stake in the success of a program or service.

Finally, state government programs and services exist to serve the residents of the state. Many programs seek to serve specific populations. Using systemic mechanisms to ensure impacted populations receive the intended services helps keep the focus on the needs of state residents. When state government begins to fully recognize the public/
constituents as their customer, more work will be done to provide viable choices to better assist the customer and create increased customer satisfaction (Osborne, 1993). Outcome measurement helps to increase government responsiveness to its customer. Allowing “customers” to provide feedback and evaluation through differing performance measurement techniques gives them a voice in the decision-making process and goal specification of programs and services.

Outcome measurement can also be viewed from an organizational perspective. From this perspective, policy is driven by the desire to ensure the survival of an organization (Malen & Knapp, 1997). Measuring and reporting outcomes and effectiveness of programs directs everyone’s attention and efforts to the common good of the organization. This may be an opportunity or venue for government agencies to reinforce their value and worth within the big picture of government. They can use this process to justify their existence and deter policies to privatize certain services or eliminate departments when they can prove their direct impacts and effectiveness in meeting the needs of the public or boosting the overall economic vitality of the state.

Limitations to Outcome Measurement

In theory, outcome measurement sounds like the answer to the problems that plague state government. On the surface, it appears that outcome measure will help obtain efficiency in operations and budgeting, quality programs and services, learning and accountability. However, outcome measurement is not without limitations. There are several challenges that minimize or negatively impact the advantages that outcome measurement is believed to provide.
Political alignment and complexities often impede outcome-based performance measurement. The frequent change in political leadership causes a constant change in priorities within government bureaucracies. Also, professional partisan conflict helps to create mutual distrust among agencies, multiple interpretations of stated goals, and conflicting goals among employees. These are key stakeholders and players who formulate the vision and direction of state government. If these individuals are unwilling to think beyond their political agendas and consider how collaborative activities can lead to a common outcome, how can a strong leadership presence or vision be cast?

Outcome measurement is a long-term strategy which requires ongoing commitment of organizational members. This is difficult with instability caused by frequent change of elected officials, political appointees and administrators within state government. As key people move on, governance structure changes and priorities shift (Mayne, 2007).

Outcome measurement requires that agencies and persons be held accountable for program end results. It assumes that agencies and individuals will be given the liberty and flexibility to think independently and determine how best to meet the objectives. Equal opportunity for all organizational members to learn and become involved is also assumed. Furthermore, it is implied that realistic goals will be set according to each individual’s expertise and factors truly within their control. The current climate of state government is not conducive to true learning or risk-taking. Decisions and policies are made at the executive level with very minimum input from those on the frontline. Deviation from the norm is not readily accepted or rewarded, even if it proves valuable.
The Government Accountability Office and the GPRA have cited several complexities in government agencies/organizations and their environments and the efforts to transform cultures to become more results-oriented. According to Holzer and Kloby (2005), representatives of 14 cabinet level federal agencies interviewed stated the paradox in the implementation of GPRA:

While planning and reporting results requires a bottom-up, decentralized implementation process for informing management decisions and providing accountability to external stakeholders, GPRA implementation is constrained by top-down directives and thus prohibits the much needed flexibility for the unique contexts of agencies. (p. 522)

A study conducted by Hatry, Morley, Rossman, and Wholey (2003) on how federal programs use outcome information reported that federal managers often lack authority and often do not realize how outcome data can improve services.

Additionally, opponents argue that public agencies have very little control over the outcomes that are of importance or impact citizens. A clear, definite connection between a program’s stated goals and outcomes cannot be intrinsically linked. There is not a way for an agency to measure its sole direct impact on outcomes (Mayne, 2007). For example, although the JTPA program may have played a vital role in training more than one million adult youth, there were other influencing factors that led to their gainful employment. How does the system account for these external factors? Additionally, as most outcomes are the result of collaboration or shared responsibility across government organizations, how will it be ensured that all individuals and agencies be equally measured and rewarded for their efforts in achieving results?

Customer satisfaction is not always the best gauge in identifying performance outcomes. It is impossible to meet the varying needs of every customer. With so many
populations to serve and scarce resources, government officials and administrators must determine how to act for the common good of everyone. Outcome measurement may lead officials to shortchange equity over efficiency and excellence. The problem of scarce resources implies that a “certain degree of insensitivity to consumer demands is positively desirable in order to protect the interests of those vulnerable consumers, least satisfied with services delivered and with the least resources for either ‘exit’ or ‘voice’ modes of protest” (Kouzmin et al., 1999, p. 122).

Finally, formal outcome measurement takes time and resources. Costs can become quite expensive. Individuals must be trained on what data to collect, how, where data will be stored and who will be in charge of data (Botcheva et al., 2002). Employees and citizens need to be educated on the benefits and rationale for implementing outcome measurement systems. With the current work load and reduced work force, as result of the demand to streamline government, agencies argue they simply do not have the time and resources to expend on this. At a time when financial resources are scarce, this would not be an efficient use of tax dollars in the short-term. In addition, state governments argue mandating formal outcome measurement systems infringes upon public policy making and undermines the authority of elected officials (National Governors Association, 2007).

What is the current vision for this Midwest state, particularly in these difficult and challenging economic times? The communicated message has been and continues to focus on transformation and working to build a 21st century global, high-tech economy. The embedded value is economic growth. The message seems to be a call to action. Yet,
there doesn’t seem to be a coherent unified approach to this call to action, leaving it to appear as simple rhetoric.

It’s no secret that economic vitality is predicated on the quality of life, education, and workforce issues, among many other things. This implies that there is room for collaboration and an opportunity to learn across government agencies/Departments. Performance measurement systems demand collaboration and clarification in the development and interpretation of strategic goals and tactical plans. Also, it helps move state government beyond the focus on quantity and into quality. There would be less concern with the number of partnerships formed with partners, etc., and more concern about the key results of those partnerships and what role the partnerships played in growing the state’s collective knowledge, capacity, and capability, thereby helping to improve the business climate and position the state economically, etc.

Despite its limitations, performance measurement returns the focus of state government to real issues that concern the public. Outcome measurement helps to create and focus on efficiency and order in operations, quality in programs, and liberty to think, make decisions, and act based upon data and information. By advocating and promoting accountability and shared responsibility with government organizations, it will help move individuals and agencies beyond individualism. It may force agencies to collaborate, seek feedback and learning on programs to effectively improve them.

Performance Measurement and the Learning Organization

Performance measurement in government is linked to accountability. Senge’s learning organization principles are theorized to improve organizations and help facilitate
collaboration, shared responsibility, increased productivity, and accountability. To date, performance measurement systems related to the learning organization has been focused on creating an instrument, model, or intervention to measure the impact on the performance of an organization.

Templeton et al. (2002) developed an instrument that measures the organizational learning construct. The research developed a 23-item Likert-scale questionnaire based on eight dimensions to describe organization learning: awareness, communication, performance assessment, intellectual cultivation, environmental adaptability, social learning, intellectual capital management and organizational grafting. “The construct represented the extent to which the organization capitalized on the knowledge, practice, and internal capabilities of other organizations” (Templeton et al., 2002, p. 201). This study focuses on top management as the conduits of organizational learning. Also, it does not test the relationship between organizational learning and measures of success related to knowledge management concerns such as creativity, innovativeness, and strategic planning and decision-making success.

Marsick and Watkins (2003) created a research-based instrument to measure the relationship between a learning organization and performance management. The Dimensions of the Learning Organization Questionnaire (DLOQ) measures the impact of an organization’s climate, culture, systems, and structures that influence whether individuals learn. The underlying premise of the DLOQ is “it is not enough to hold individuals accountable for learning continuously without also building the organization’s capacity to support, encourage and make use of that learning” (p. 133). The DLOQ analyzes change at every level of learning—from the individual to group to
organizational. There are seven dimensions of the learning organization measured by the DLOQ. These dimensions are based on an organization’s ability to create continuous learning opportunities, promote inquiry and dialogue, encourage collaboration and team learning, create systems to capture and share learning, empower people toward a collective vision, connect the organization to its environment, and provide strategic leadership for learning. According to Marsick and Watkins (2003), their model supports Senge’s learning organization model and argues that the fifth discipline—systems thinking—is the glue that makes the other disciplines work” (p. 140) (see Figure 3). Until this study, the DLOQ instrument has not been utilized to measure learning in a government agency.

*Figure 3*. Learning Culture and Organizational Performance (Marsick & Watkins, 2003)
Kiedrowski (2006) conducted empirical research analyzing the relationship between learning organization and employee attitudes in a single, private organization. The findings reported that the acceptance of Senge’s concepts led to improved employee job satisfaction. However, when the result findings were compared to another organization lacking acceptance of the learning organization principles, there did not appear to be a significant impact or increase of employee job satisfaction.

Wright (1997) conducted a national survey of sales and marketing executives from several companies. The study reported that “job satisfaction and organizational commitment are each influenced by market orientation or the learning organization” (p. iii). Ellinger, Ellinger, Yang, and Howton (2002) studied the relationship between the learning organization concepts and financial performance in a single organization.

Other research has studied culture and leadership as it relates to performance measurement in a learning organization. Each of these studies referenced, with the exception of the Marsick and Watkins (2003), needs validation. In addition, each focuses on measuring a single element associated with the learning organization with a private company.

Based on the previous research, this study will attempt to make the connection between individual learning, organizational learning, and performance within state government. The research to date focuses on a review of the learning organization, model, and measurement instrument. What is lacking is a quantitative measure of the perception of a state government as a learning organization. Thus, there is a need for this research within the conversation on learning organizations, particularly as it applies to government entities.
CHAPTER III

METHODOLOGY

Research Design

This study utilized an *ex post facto* design. This type of quantitative research is utilized to test a theory, generalize data, and establish a causal relationship among variables. Quantitative research is a systematic method that involves developing hypotheses to explain occurrences between variables (Walonick, 2003). Methods are used to gain numeric descriptions and objective data that can be statistically analyzed and generalized to a particular population (Creswell, 2003). *Ex post facto* research examines retrospectively the effects of a naturally occurring event on a subsequent outcome with the expectation of establishing a casual link, association, or meaning between the independent and dependent variables. Manion and Morrison (2000) identify two kinds of *ex post facto* research—the co-relational study and the criterion study. The co-relational study helps to discover casual relationships among the independent and dependent variables, thereby providing measures of association (p. 206). The criterion-group (casual-comparative) seeks to learn of possible causes of a specific phenomenon being studied by comparing subjects in which the independent variable is present to those where the independent variable is absent.

Surveys are considered a resource to illustrate hypotheses in *ex post facto* research. This information can be used to test hypotheses in more experimental methods.
A limitation of the *ex post facto* research design is its inability to definitively define a single causal factor or link between the independent and dependent variables (Manion & Morrison, 2000). There may be multiple causes to explain an event.

The primary research question this study addressed is: To what extent do employees in this Midwest state perceive state government as a learning organization? The study investigated state employees’ use of Senge’s five disciplines associated with a learning organization and their perception of performance toward organizational goals. Data were collected via a self-administered online survey. Surveys are an effective quantitative method to obtain a numeric description of trends, attitudes, or opinions of a population (Creswell, 2003).

This chapter is divided into the following sections: the sampling frame, instrumentation, data collection, and data analysis of the study.

**Sampling and Participation**

The study focused on a state government in the Midwest. Civil servants employed by this Midwest state government are the subjects in this study. The state is comprised of 19 state agencies, employing more than 54,000 individuals. Of this total, an estimated 50,000 are full-time and more than 3,400 are part-time employees. There are 8,169 supervisory/managerial, 19,908 professional staff, and 7,145 administrative support staff.

Participants in this study were randomly selected from among the aforementioned classifications. The subjects were stratified by classification types: supervisor/management, professional, and administrative support staff. Selected demographic information was collected from each respondent based upon the following characteristics:
gender, age, ethnicity, educational background, occupation, and length of time employed by the state. In addition, data were collected from respondents concerning their perception of a learning organization, the dependent variable. Three hundred and eighty one (381) employees were surveyed. Based upon the statistical formula provided by Manion and Morrison (2000), this sample size enabled a confidence level of 95%. The researcher attempted to achieve a high rate of response representative of the total population of state employees. As an incentive to participate, respondents were given gift cards to P.F. Chang’s.

Participation in this study was completely voluntary and there was no penalty for not participating or for withdrawing from the study. Participants’ identity was completely anonymous, as the survey contained no place for respondents to submit a name or any other identifying factor. The gift cards were distributed through a third-party administrator. All data were kept on a flash drive in a secured file located in the office of the principal investigator for a minimum of 3 years.

Instrumentation

The Dimensions of a Learning Organization Questionnaire (DLOQ) instrument (Watkins & Marsick, 2003) was used for this study. The seven dimensions in the Watkins and Marsick instrument are measured in 43 items. Yang (2003) provided a short form of the survey, utilizing seven measurement items. Previous research conducted by Yang (2003), O’Neil (2003), and Yang, Watkins, and Marsick (1998) used this instrument (Ellinger et al., 2002). These studies have been found to support the assessment of the learning culture in organizations (Yang, 2003).
The survey questionnaire’s purpose is twofold:

1. To assess employees’ perception of the learning culture of the organization based on Peter Senge’s five learning organization principles.

2. To assess employees’ perception of organizational performance.

Variables in this study were measured on three different levels: individual, team, and organizational learning. The independent variables for questions 1 and 2 are the same. They are employee classification/group, age, gender, education, and years of service. The dependent variables differ for each research question. For research question 1, the dependent variable is the employee perception of government as a learning organization as obtained through the combined score of organizational and group learning as measured on the individual and organizational levels. For research question 2, the dependent variable is employee perception of organizational performance as attained through the comprehensive score on performance measurements at the organizational level.

For research question 3, the predictive or covariate variable set is the seven learning constructs representing the dimensions of Senge’s learning organization as assessed by the Dimensions of a Learning Organization Questionnaire (DLQ; seven items measured on a 6-point scale; Watkins & Marsick, 2003). The predictive variables are continuous learning, inquiry and dialogue, collaboration and team learning, systems to capture learning, connecting the organization, empowering people toward a collective vision, and strategic leadership. The dependent (criterion) variable set is organizational performance (four items on measured on a 10-point scale). The criterion variables are
information technology, number of knowledge/skilled workers, customer service, and number of suggestions implemented (innovation/creativity).

The survey questionnaire consisted of a Likert scale. The independent variable(s) were measured on an ordinal Likert scale ranging from 1–6 with 1 = Almost Never and 6 = Almost Always, for questions 1 through 7. The Likert scale for questions 8 through 12 ranges from 1–10 with 1 = Least Accurate and 10 = Almost Always.

The dependent variable, employees’ perception of state government as a learning organization, was assessed by a 7-item scale, based on the self-reported use of Senge’s five learning organization principles. The 6-point Likert scale measured employees’ perception with high composite scores reflecting the use of the learning organization principles and conversely low numbers indicating low use of the learning organization principles or that a learning culture does not exist.

The dependent variable, employees’ perception of organizational performance was assessed by four items on the questionnaire based on whether the organization is perceived as capturing and sharing information. Based on a 10-point Likert scale, organizational performance was measured with high composite scores reflecting a high level of performance and low composite scores reflecting below average performance, as perceived by the employees.

Validity and Reliability

The content of the research instrument is appropriate for this experiment. The content was selected from prior research (Yang, 2003; Yang et al., 1998) that was best
related to Senge’s concepts and learning within government. These studies show a validity and reliability coefficient of 0.90 (Yang, 2003).

Construct validity requires that the premises of the research be based on underlying theory (Ford, 1997). Yang (2003) used a multiple-phase process to establish validity and reliability of the Watkins and Marsick DLOQ survey instrument. Validation was obtained by conducting a non-random sampling of 836 participants from multiple organizations. The first two phases determined that the instrument was a valid measure. The third phase used the structural equation modeling (SEM) technique to establish relationships among the related constructs. Results of the SEM demonstrated measures of the seven dimensions of the learning culture had a statistically significant effect on organizational outcomes (Yang, 2003, p. 158). Yang confirmed the instrument by demonstrating the construct of the learning culture can be accurately reflected in a number of observable behaviors and activities. In this regard, he stated, “The abstract concept of a learning culture can be accurately inferred through observable behaviors included in the DLOQ” (p. 159).

Yang established the reliability coefficient alpha of the DLOQ survey instrument between the range of .68 to .83. The overall reliability estimate for the 7-item scale is .84.

Data Collection Methods

A request was made to the Department of Civil Service for email addresses of all employees. Participants were randomly selected from the employee online directory. An email requesting participants complete a Web-based survey was sent to 381 civil servants. P.F. Chang gift cards were provided to the first 100 participants as an incentive to
complete the survey. Gift cards were distributed by a third-party administrator to ensure participants’ identities remained anonymous.

Data were collected over a 4-week time period. An initial email request for participants to complete the survey, with a link to the Web-based survey, was sent to the identified sample population (see Appendix B). Respondents were given a 2-week period to complete the survey. Two reminder emails, with the link to the Web-based survey, were sent to all participants.

Rather than utilizing the mailing of the survey instrument, the investigator posted an electronic copy of the instrument on the Internet. There are several identified benefits to utilizing a Web-based survey. Web-based surveys are less expensive than traditional survey formats. The ability to reach a greater population is increased given that large numbers of people have access to the Internet. Web-based surveys help save time and money by granting the researcher the ability to capture and analyze data faster and cheaper (Schmidt, 1997).

There are some disadvantages associated with Web-based surveying. Research found that Internet surveys often have a lower response rate than mailed surveys. Including personalized email cover letters, follow-up reminders, pre-notification of the intent to survey, and simpler formats have been found to increase Internet survey response rates (Solomon, 2001). In addition, precaution must be taken to prevent respondents from submitting multiple copies of their responses.
Data Analysis

The purpose of this study was to determine the extent to which government employees within this Midwest state perceive the government as operating as a learning organization. To test the hypotheses, appropriate statistical procedures (including the use of means, standard deviations, and an analysis of variance [ANOVA]) to determine the extent to which respondents who perceive the government as utilizing the disciplines of a learning organization will also score the organization high on select performance outcomes (customer service, knowledge management, implementation on new suggestions, use of information technology, and individual growth). In all test applications, the 0.05 level of confidence was used to determine statistical significance.

Table 3 outlines the statistical analysis utilized to answer each research question.

Although the first hypothesis may be confirmed or supported, there may be other statistically significant factors that contribute to the measure of success related to organizational knowledge management. To answer the first research question, the researcher measured the presence and use of the learning organization by the three levels identified: individual, team, and organizational. Subjects were not asked if the state is a learning organization. Rather, the concept was operationalized based upon their responses to survey questions 1 through 7. An analysis of variance (ANOVA) procedure was performed to examine employee perceptions of state government as a learning organization and compared those perceptions across the three specified employee levels (management, professional, and administrative). In addition, the researcher conducted a
post-hoc comparison analysis to highlight any correlations or variations in employee perceptions across the employee categories.

Table 3

*Research and Survey Questions*

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Source/Variable</th>
<th>Measurement</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what extent is state government perceived by its employees as operating as a learning organization?</td>
<td>Participants’ score on responses to survey questions 1–7</td>
<td>1–6 Likert scale 1 = Almost Never 6 = Almost Always</td>
<td>Descriptive Stats</td>
</tr>
<tr>
<td>Is there a difference among groups of employees in terms of their perception of state government functioning as a learning organization?</td>
<td>Score of participants’ responses to survey questions 1–7 &amp; tabulation and compilations of responses to questions 13–18</td>
<td>1–6 Likert scale 1 = Almost Never 6 = Almost Always</td>
<td>ANOVA Post-hoc comparison analysis</td>
</tr>
<tr>
<td>How do state employees perceive the level of their organizational performance?</td>
<td>Score of participants’ responses to survey questions 8–12</td>
<td>1–6 Likert scale 1 = Almost Never 6 = Almost Always</td>
<td>Means of organizational performance subscales Descriptive stats</td>
</tr>
<tr>
<td>Is there a difference among groups of employees in their perception of organizational performance?</td>
<td>Score of survey questions 8–12; tabulations and compilation of responses to questions 13–18</td>
<td>1–6 Likert scale Multiple choice</td>
<td>ANOVA Post-hoc comparison analysis among groups</td>
</tr>
<tr>
<td>Is there a statistical relationship between the perception of state government functioning as a learning organization and employee perceptions of the level of organizational performance?</td>
<td>Total score for questions 1–7 responses compared to responses to total sum of questions 8–12.</td>
<td>1–6 Likert scale Multiple choice</td>
<td>Canonical correlation</td>
</tr>
<tr>
<td>Demographics</td>
<td>Questions 13–18 Classification Years of Service Educational background Gender Age Ethnicity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
An ANOVA is used to test hypotheses concerning means when there are several populations and to make inferences whether any differences among the samples might be caused by chance variation. The ANOVA procedure is one of the most powerful statistical techniques (www.statistics.com). An ANOVA, post-hoc comparison analysis was chosen as an appropriate statistical technique as a second stage of the ANOVA to determine if the groups significantly differ from others in respect to the mean. The post-hoc multiple comparison procedures were used to determine where the differences among the means occur. Specifically, the researcher determined if there is a relationship between learning and performance perceptual scores.

Research question 2 measured employee perception of organizational performance. An ANOVA was used to compare perceptions across the three employee levels. Employee responses to survey questions 8 through 12 provided the basis for the perceptual outcomes. Again, a post-hoc comparison analysis was conducted to determine if differences existed among employee groups in their perceptions of performance. In addition, an independent samples t test was conducted to ascertain if high perception of organizational learning resulted in high perception of performance.

To address the third research question in this study, a canonical correlation was conducted to assess the association between employees’ perception of this Midwest state government as a learning organization and their perception of organizational performance. Canonical correlation is a technique for examining the association between two sets of variables. The underlying principle is to explain or summarize the relationship between two sets of variables by finding a linear combination of each set of variables (both dependent and independent) in a manner that maximizes the correlation between the
variable sets (Ellinger et al., 2002). The objective is to assess the overall associated variability between employees’ perception of government as a learning organization and perceived organizational performance. One or more additional linear combinations are then formed for each variable set in an attempt to further explain the residual variance that is not explained by the initial correlation. Specifically, the researcher examined the affects of the seven learning constructs on performance measures.

A statistical software package, SPSS, was utilized to conduct a correlation analysis, comparison analysis and ANOVA between the learning organization principles and the dependent variables. The canonical correlation was performed by a MANOVA procedure (see Appendices H and I).

*Report of Findings*

The study findings are reported in narrative form in Chapter IV. Results from the statistical analyses are presented in tables, charts, and graphs. Descriptive statistics, including means, standard deviations, and ranges, are shown. The breakdown of how employees were categorized is provided. A detailed summary chart highlighting which survey questions pertain to the learning organization principles is provided as well.
CHAPTER IV

FINDINGS OF THE STUDY

The purpose of this study was to examine the relationship between learning organization principles and organizational performance within a Midwest state government. Additionally, this study sought to determine if employees perceived this state as a learning organization. This chapter is organized into two sections. The first section provides descriptive statistics related to the participation of respondents in the study, and the second section presents results of testing of the hypotheses. The hypotheses are listed as they were presented in Chapter I with the results of the respective statistical analyses. All hypotheses were directional and the 0.05 level of confidence was used for determining statistical significance.

Response Rate

The overall response rate for individuals participating in this study by employment category is found in Table 4.

As illustrated in Table 4, there were 26,673 managers, professionals, and administrative staff working in this Midwestern state government. Of these, 381 employees were randomly selected to participate in this study and 110 (or 28.9%) returned the instrument.
Table 4

Sample Demographic by Employee Classification

<table>
<thead>
<tr>
<th>Employment Category</th>
<th>Number in Populationa</th>
<th>Number Surveyed</th>
<th>Number Returned</th>
<th>Percent Returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisors/Managers</td>
<td>1,521</td>
<td>127</td>
<td>45</td>
<td>35.0</td>
</tr>
<tr>
<td>Professional</td>
<td>19,685</td>
<td>127</td>
<td>40</td>
<td>31.5</td>
</tr>
<tr>
<td>Administrative Staff</td>
<td>5,467</td>
<td>127</td>
<td>25</td>
<td>19.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>26,673</strong></td>
<td><strong>381</strong></td>
<td><strong>110</strong></td>
<td><strong>28.9</strong></td>
</tr>
</tbody>
</table>

aPopulation numbers were retrieved from annual workforce report produced by the Midwest state, Fiscal Year 2009-2010.

When considering the gender of the respondents, 73 were women. Of the women respondents, 23 were supervisors, 27 professionals, and 23 administrative support staff. Sixty-five percent of women respondents possessed a bachelor's degree or higher. Of the 37 male respondents, 22 were supervisors, 13 professionals, and 2 administrative staff. The percentage of male respondents possessing a 4-year college degree was 81. The representation of men and women respondents is consistent with the distribution of men and women in the population. (The reader is referred to Appendix F for population and sample profiles.)

Table 5 displays the mean scores for each category. Overall, the mean score for the learning organization was 25 (maximum score was 42). Scores higher than 25 infer the perception of satisfactory or high organizational learning, and a score less than 25 indicate perception of below average perception of learning. Learning was scored highest by employees possessing a graduate degree (mean = 26.23), 18–34 age group (mean =
Table 5

Mean and Standard Deviations for Learning Organization and Organizational Performance Scores by Category

<table>
<thead>
<tr>
<th></th>
<th>Organizational Learning</th>
<th>Organizational Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Certificate/Associate Degree</td>
<td>22.76</td>
<td>8.47</td>
</tr>
<tr>
<td>Bachelor Degree</td>
<td>25.62</td>
<td>7.08</td>
</tr>
<tr>
<td>Graduate Degree</td>
<td>26.23</td>
<td>7.42</td>
</tr>
<tr>
<td>High School</td>
<td>24.4</td>
<td>7.55</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>25.18</td>
<td>7.47</td>
</tr>
<tr>
<td>Male</td>
<td>25.08</td>
<td>7.66</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18–34</td>
<td>29.67</td>
<td>8</td>
</tr>
<tr>
<td>35–44</td>
<td>23.10</td>
<td>7.95</td>
</tr>
<tr>
<td>45–54</td>
<td>25.13</td>
<td>7.38</td>
</tr>
<tr>
<td>55–64</td>
<td>24.31</td>
<td>7.16</td>
</tr>
<tr>
<td>65+</td>
<td>28.07</td>
<td>7.12</td>
</tr>
<tr>
<td><strong>Years of Service</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–5</td>
<td>25.38</td>
<td>7.94</td>
</tr>
<tr>
<td>16–20</td>
<td>27.75</td>
<td>5.78</td>
</tr>
<tr>
<td>21–25</td>
<td>22.80</td>
<td>6.7</td>
</tr>
<tr>
<td>26–30</td>
<td>23.76</td>
<td>9.34</td>
</tr>
<tr>
<td>31+</td>
<td>26.06</td>
<td>6.54</td>
</tr>
<tr>
<td><strong>Employee Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrative</td>
<td>24.48</td>
<td>8.17</td>
</tr>
<tr>
<td>Manager</td>
<td>27.18</td>
<td>6.07</td>
</tr>
<tr>
<td>Professional</td>
<td>23.27</td>
<td>8.12</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>25.21</td>
<td>7.82</td>
</tr>
<tr>
<td>Non-White</td>
<td>24.92</td>
<td>6.51</td>
</tr>
</tbody>
</table>

*Note.* SD = Standard Deviation. Age groups 18–25 and 26–34 were combined to account for small cases in each category. Ethnicity was reduced to two categories to account for low number of cases in specific ethnic groups.
29.67), individuals with 16–20 years of service (mean = 27.75), and managers (mean = 27.18).

The mean score for organizational performance was 25.66 (maximum score was 45). Scores 26 or higher infer the perception of satisfactory or high performance and a score less than 26 indicate below average perception. Organizational performance was scored highest by males (mean = 25.73), 18–34 age group (mean = 29.17), 16–20 years of service (mean = 30.75), and non-white employees (mean = 26.92).

Hypotheses Testing

This section will provide the results for each hypothesis tested. The hypothesis will be restated and an appropriate statistical test will be provided to determine whether the hypothesis will be accepted or rejected. The 0.05 level of confidence will be used for determining statistical significance.

Hypothesis One

*Employees who perceive the state as a learning organization will score the organization significantly higher on organizational performance as compared to those employees who do not.*

The first hypothesis is concerned with testing whether those employees who perceive the state as a learning organization are likely to rate the state higher on organizational performance than those who scored organizational learning below average. On the survey instrument administered to state employees, items 1 through 7 measured the organizational learning domains. The learning organization score is the sum of the employee’s scores to questions 1 through 7. The mean score (25) and above is coded as
the high learning group (or group 1) for organizational learning. Scores higher than 25 infer the presence of a learning organization, and a score less than 25 (group 0 or low learning group) indicates a learning culture does not exist. Fifty-nine respondents (53.6%) scored the organization high on learning. The mean score for high learning was 30.90. Fifty-one respondents (46.4%) scored the organization low on learning with a mean learning score of 18.49.

Survey questions 8 through 12 measured the various attributes associated with organizational performance. The performance score was the sum of participant responses to these questions. The overall mean score for organizational performance was 26. Scores higher than 26 infer the perception of satisfactory or high performance, and a score less than 26 indicates perception of low performance. Fifty-seven (51.82%) respondents scored the organization high on performance. The high organizational performance mean score was 32.77. Fifty-three (48.18%) respondents scored the Midwest state government low on performance. The mean score for low organizational performance was 18.08. The data in Table 6 highlight this information.

Table 6

A Comparison Between the High- and Low-learning Organization Groups on Their Ratings of the Organization Performance Scores

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Cohen d</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Learning Org. Group</td>
<td>21.0</td>
<td>6.9</td>
<td>−5.869</td>
<td>108</td>
<td>.000*</td>
<td>−1.112</td>
<td>.486</td>
</tr>
<tr>
<td>High Learning Org. Group</td>
<td>29.7</td>
<td>8.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant at the <.001 level.
An independent $t$ test result revealed that there was a statistically significant difference between the performance scores of those employees who scored the organization high on learning compared to those who scored the organization below average. With the means of the organizational performance rating being 21.0 and 29.7 for the low- and high-learning organization groups, respectively, there is a statistically significant relationship between respondents’ perception as to whether the state was a learning organization and respondents’ perception of the state’s performance level ($t_{(5.776)} = .000$). In other words, the perceived organizational learning score is associated with respondents’ perceived organizational performance score. Employees who scored the organization high on learning also scored the organization high on performance. Those who scored the organization low on learning also scored the organization below average on performance.

As an inquiry into the perceived level of organizational learning and performance, a Pearson correlation also suggests there is a statistically significant relationship between the two variables ($r = .658, p < .01$) (see Appendix G).

**Hypothesis Two**

*Employee perception of this state government as a learning organization will differ among employee groups.*

This second hypothesis sought to determine whether there was a statistically significant difference between the perception of employee groups regarding the state as being a learning organization. The reader is referred to Table 7.
An analysis of variance (ANOVA) test revealed that there was a statistically significant difference in the perception of employee groups regarding the state government operating as a learning organization \((p = .049)\). However, the effect size was relatively small and the difference was not highly significant. The group membership explains about 5.5% of the variance in the variable of learning organization \((i.e., 336.4 / 6133.7 = 0.055)\). Post-hoc multiple comparisons indicated that managers’ perception of the state governing body as a learning organization significantly differed from perceptions of the professional staff, with the manager group having a statistically significant higher mean than that of the professional group (see Table 8). The perception of a learning organization is not significantly different between managers and administrative staff.

The study originally proposed to compare the perceptions among all the identified employee group characteristics. This was not possible due to the imbalanced sample population sizes in some of the employee categories. To account for this imbalance, independent variables with less than five subjects were combined and recoded. The

Table 7

*Means and Standard Deviation for the Analysis of Variance (ANOVA) with Employee Group as the Independent Variable and Learning Organization as the Dependent Variable*

| Dependent Variable | Managers/Supervisors  
\(n = 45\) | Professional Staff  
\(n = 40\) | Administrative Staff  
\(n = 25\) |  \(F\)  
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Organization Score</td>
<td></td>
<td></td>
<td></td>
<td>3.109</td>
</tr>
<tr>
<td>(M)</td>
<td>27.178</td>
<td>23.275</td>
<td>24.480</td>
<td>.049*</td>
</tr>
<tr>
<td>(SD)</td>
<td>6.073</td>
<td>8.124</td>
<td>8.166</td>
<td>0.055</td>
</tr>
</tbody>
</table>

* Significant at the .05 alpha level.
ANOVA revealed that there was not a statistically significant difference between the perception of employee groups in the categories of age \( (F(4, 105) = 1.581, p > .05) \), years of service \( (F(4, 105) = .874, p > .05) \) and education \( (F(4, 105) = .802, p > .05) \) regarding this Midwestern state government operating as a learning organization.

Table 8

*Learning Perception – Pair-wise Post-hoc Comparison*

<table>
<thead>
<tr>
<th>Level (I)</th>
<th>Level (J)</th>
<th>M Difference (I-J)</th>
<th>SE</th>
<th>Sig.</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative</td>
<td>Manager</td>
<td>-2.6978</td>
<td>1.83601</td>
<td>.434</td>
<td>-7.1633, 1.7678</td>
</tr>
<tr>
<td></td>
<td>Professional</td>
<td>1.2050</td>
<td>1.87654</td>
<td>1.000</td>
<td>-3.3591, 5.7691</td>
</tr>
<tr>
<td>Manager</td>
<td>Administrative</td>
<td>2.6978</td>
<td>1.83601</td>
<td>.434</td>
<td>-1.7678, 7.1633</td>
</tr>
<tr>
<td></td>
<td>Professional</td>
<td>3.9028*</td>
<td>1.59947</td>
<td>.049</td>
<td>-7.7930, -0.0126</td>
</tr>
<tr>
<td>Professional</td>
<td>Administrative</td>
<td>-1.2050</td>
<td>1.87654</td>
<td>1.000</td>
<td>-5.7691, 3.3591</td>
</tr>
<tr>
<td></td>
<td>Manager</td>
<td>-3.9028*</td>
<td>1.59947</td>
<td>.049</td>
<td>-7.7930, -0.0126</td>
</tr>
</tbody>
</table>

*Note. CI = Confidence Interval, SE = Standard Error, M Difference = Mean Difference, LB = Lower Bound, UB = Upper Bound—based on observed means. The error term is Mean Square (Error) = 49.758. * The mean difference is significant at the .05 level.*

**Hypothesis Three**

*Employee perception of this Midwestern state government performance will differ among employee groups.*

This third hypothesis sought to determine whether there was a statistically significant difference between the perception of employees regarding the state’s performance. The reader is referred to Table 9.
Table 9

Means and Standard Deviation for the Analysis of Variance (ANOVA) with Employee Group as the Independent Variable and Organizational Performance as the Dependent Variable

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Managers/Supervisors $n = 45$</th>
<th>Professional Staff $n = 40$</th>
<th>Administrative Staff $n = 25$</th>
<th>$F$</th>
<th>$P$</th>
<th>$\eta$-square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Performance Score</td>
<td></td>
<td></td>
<td></td>
<td>.717</td>
<td>.491</td>
<td>.013</td>
</tr>
<tr>
<td>$M$</td>
<td>26.51</td>
<td>24.35</td>
<td>26.36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$SD$</td>
<td>7.31</td>
<td>9.97</td>
<td>9.65</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 10

Organizational Performance – Pair-wise Post-hoc Comparison

<table>
<thead>
<tr>
<th>Level (I)</th>
<th>Level (J)</th>
<th>$M$ Difference (I–J)</th>
<th>SE</th>
<th>Sig.</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative</td>
<td>Manager</td>
<td>–.1511</td>
<td>2.21693</td>
<td>1.000</td>
<td>–5.6685 5.3663</td>
</tr>
<tr>
<td>Professional</td>
<td>Administrative</td>
<td>2.0100</td>
<td>2.49231</td>
<td>.805</td>
<td>–4.1297 8.1497</td>
</tr>
<tr>
<td>Manager</td>
<td>Administrative</td>
<td>.1511</td>
<td>2.21693</td>
<td>1.000</td>
<td>–5.3663 5.6685</td>
</tr>
<tr>
<td>Professional</td>
<td>Administrative</td>
<td>2.1611</td>
<td>1.91672</td>
<td>.597</td>
<td>–2.5221 6.8443</td>
</tr>
<tr>
<td>Professional</td>
<td>Manager</td>
<td>–2.0100</td>
<td>2.49231</td>
<td>.805</td>
<td>–8.1497 4.1297</td>
</tr>
<tr>
<td>Manager</td>
<td>Administrative</td>
<td>–2.1611</td>
<td>1.91672</td>
<td>.597</td>
<td>–6.8443 2.5221</td>
</tr>
</tbody>
</table>

Note. CI = Confidence Interval, SE = Standard Error, $M$ Difference = Mean Difference, LB = Lower Bound, UB = Upper Bound—based on observed means. The error term is Mean Square (Error) = 79.122.

An analysis of variance (ANOVA) test revealed that there was not a statistically significant difference in the perception of employee groups regarding the perceived performance of this Midwestern state government (see Table 10). The effect size was
very small (i.e., 113.4 / 8579.5 = 0.01). Post-hoc multiple comparisons indicated that the perception of organizational performance is not significantly different between managers, professional staff, or administrative staff.

The ANOVA revealed that there was not a statistically significant difference between the perception of employee groups in the categories age \( F(4, 105) = .616, p > .05 \), years of service \( F(4, 105) = .820, p > .05 \) and education \( F(4, 105) = .124, p > .05 \) regarding the perceived organizational performance of this Midwestern state government.

**Hypothesis Four**

*There is a statistically significant relationship between organizational learning constructs and organizational performance.*

Hypothesis four suggested that learning construct variables were predictors of this state government organizational performance. A canonical correlation analysis revealed that there was a significant relationship between respondents’ perception of the learning constructs and performance variables. The reader is referred to Table 11.

The analysis yielded five functions with squared canonical correlations \( R_c^2 \) of .000, .022, .452, .704, and .669 for each successive function (see Appendix I). For the set of five canonical functions, the effect size was .695, which indicated that the full model explained a substantial portion, about 70 %, of the variance shared between the variable sets. The test shows that the first function was statistically significant using the Wilks’ \( \lambda \) = .305 criterion, \( F(35, 414.68) = 3.86788, p < .001 \).
Table 11

Organizational Learning Constructs as Predictors of Performance: Results of Canonical Analyses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Function 1</th>
<th></th>
<th></th>
<th>Function 2</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef</td>
<td>$r_s$</td>
<td>$r_s^2$ (%)</td>
<td>Coef</td>
<td>$r_s$</td>
<td>$r_s^2$ (%)</td>
<td>$h^2$ (%)</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>.29947</td>
<td>.80345</td>
<td>64.55</td>
<td>1.23967</td>
<td>.56084</td>
<td>31.45</td>
<td>96.00</td>
</tr>
<tr>
<td>New Suggestions Implemented</td>
<td>.30099</td>
<td>.82047</td>
<td>67.32</td>
<td></td>
<td>-.76736</td>
<td>-.28360</td>
<td>8.04</td>
</tr>
<tr>
<td>Knowledge Management</td>
<td>.12090</td>
<td>.72060</td>
<td>51.93</td>
<td></td>
<td>-.27176</td>
<td>-.08296</td>
<td>0.69</td>
</tr>
<tr>
<td>Information Technology</td>
<td>-.21017</td>
<td>.34268</td>
<td>11.74</td>
<td>.27509</td>
<td>.15890</td>
<td>2.52</td>
<td>14.26</td>
</tr>
<tr>
<td>Individual Growth</td>
<td>.55175</td>
<td>.90139</td>
<td>81.25</td>
<td>-.29383</td>
<td>-.07099</td>
<td>.50</td>
<td>81.75</td>
</tr>
<tr>
<td>$R^2$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous Learning</td>
<td>.12853</td>
<td>.79103</td>
<td>62.57</td>
<td>-1.01965</td>
<td>-.41223</td>
<td>16.99</td>
<td>62.74</td>
</tr>
<tr>
<td>Inquiry &amp; Dialogue</td>
<td>.23308</td>
<td>.83359</td>
<td>69.49</td>
<td>.75055</td>
<td>.24439</td>
<td>5.97</td>
<td>75.46</td>
</tr>
<tr>
<td>Collaboration / Team Learning</td>
<td>-.06459</td>
<td>.64162</td>
<td>41.17</td>
<td>-.26806</td>
<td>-.17100</td>
<td>2.92</td>
<td>41.14</td>
</tr>
<tr>
<td>Systems</td>
<td>.16499</td>
<td>.79492</td>
<td>63.19</td>
<td>.46156</td>
<td>.17078</td>
<td>2.92</td>
<td>63.22</td>
</tr>
<tr>
<td>Empowering People toward a Shared Vision</td>
<td>.41726</td>
<td>.91776</td>
<td>84.23</td>
<td>-.67136</td>
<td>-.21524</td>
<td>4.63</td>
<td>88.86</td>
</tr>
<tr>
<td>Connecting the Organization</td>
<td>.00373</td>
<td>.51897</td>
<td>26.93</td>
<td>-.04455</td>
<td>-.00099</td>
<td>.98</td>
<td>26.93</td>
</tr>
<tr>
<td>Strategic Leadership</td>
<td>.26707</td>
<td>.85908</td>
<td>73.80</td>
<td>.72785</td>
<td>.17454</td>
<td>3.04</td>
<td>76.84</td>
</tr>
</tbody>
</table>

Note. Structure coefficients ($r_s$) greater than 0.40 are underlined. Communality coefficients ($h^2$) greater than 40% are underlined. Coef = standardized canonical function coefficient; $r_s$ = structure coefficient; $r_s^2$ = squared structure coefficient; $h^2$ = communality coefficient.

Function 2 was also statistically significant $F(24, 346.58) = 1.704, p = .022$. The first two functions explained 55% and 21.6% of shared variance, respectively. Functions
3 to 5, 4 to 5, and 5 (the only function that was tested in isolation) did not explain a statistical significant amount of shared variance between the variable sets, $F(15, 276.46) = 1.003, p > .05$, $F(8, 202) = .685, p > .05$, and $F(3, 102) = .520, p = .669$, respectively.

Table 11 presents the standardized canonical function coefficients and structure coefficients for Functions 1 and 2. Looking at the Function 1 coefficients, the relevant predictor (independent) variables were primarily empowerment, strategic leadership, and inquiry and dialogue. Systems thinking and continuous learning made secondary contributions to the synthetic criterion (dependent) variable. Using 0.4 as the cut-off point for the structural coefficients, the first canonical correlation function indicates that those individuals who perceived the organization high on continuous learning, inquiry and dialogue, collaboration, systems thinking, empowerment, connecting the organization, and strategic leadership tended to perceive the organization high on customer satisfaction, knowledge management, information technology, and individual skills growth.

The performance (criterion) variable, individual skills growth, is the most dominant for the first function. When examining the learning constructs, empowering people to a shared vision had the larger canonical function coefficient. Empowering people toward a shared vision is positively correlated with customer satisfaction, new suggestions implemented, and individual growth. In other words, higher levels of empowering people are associated with higher levels of customer satisfaction, new suggestions implemented, and individual skills growth.

The dominant criterion variable in the second canonical function is customer satisfaction. The coefficients suggest that the only predictor variable of relevance was continuous learning. The second function indicates customer satisfaction was inversely
related to continuous learning. Those who scored the organization high on customer satisfaction, perceived it lower on continuous learning.

The same interpretations can be made when examining the structure correlations of the individual variables. Each of the contributing variables was positively related to all of the learning constructs. The high scores on Function 1 reflect high scores on all the performance variables, albeit to a lesser degree on the information technology variable. The high scores indicate employees have a high perception of customer satisfaction, suggestions implemented, knowledge management, and individual growth and all of the learning constructs. The canonical correlation for the first pair of canonical variates indicates that people who report learning at the individual, team, and organizational levels also report high perceptions of performance in all areas, although minimally in information technology.

The canonical correlation analysis scores on Function 2 reflect high scores on customer satisfaction and information technology, low scores on suggestions implemented, knowledge management, and individual growth. Those who perceived high inquiry and dialogue, systems thinking, and strategic leadership were low on continuous learning, collaboration, empowerment, and connecting the organization. This group of people in the sample can lead to low suggestions implemented, knowledge management, and individual growth.

Functions 1 and 2 have different influential variables. This is quite common when there are multiple sets of variables. The correlation is multidimensional, although the first function is considered to be the most reliable.
Connecting the organization variable made only a marginal contribution as a predictor (see the $h^2$ in Table 11), thereby suggesting that it may not have been strongly related to performance. Furthermore, the information technology performance construct variable did not appear to be related to learning (see the $h^2$ statistics in Table 11).

Summary

This study sought to determine the relationship between employees’ perception of state government as a learning organization and organizational performance. The findings suggest employees perceive this Midwestern state functioning as a learning organization. There is a strong linear relationship between organizational learning and performance. Evidence suggests that within this state a high learning organization score resulted in a high organizational performance score.

Furthermore, managers differed significantly in their perceptions of the government as a learning organization. The canonical correlation analysis revealed that select performance measures were predicted by the learning organization constructs. Additionally, people empowerment and individual growth were found to be the most dominant variables in the prediction relationship. Higher levels of empowering people is associated with higher levels of customer satisfaction, new suggestions implemented, and individual skills growth.
CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This study sought to determine the extent to which learning organization constructs influenced performance in state government. The overarching purpose was to examine the relationship between Peter Senge’s (1990) five learning organization principles and knowledge management performance. To examine this relationship, the study focused on assessing employees’ perception of a learning culture and organizational performance within a Midwestern state government. This chapter presents a summary of the research findings and the conclusions reached in this study based upon the analysis of data in this empirical study. Finally, the study concludes by providing recommendations for further study.

Summary

The primary purpose of this study was to determine if this Midwestern state government was perceived by its employees as operating as a learning organization. Employee responses to a Web-based survey indicated the use of Senge’s five learning organization principles (mental models, shared vision, systems thinking, personal mastery, and team learning) within this governing body at the three levels of learning (individual, team, and organizational). Analyses conducted indicated the perception of a learning culture was influenced by the individual’s job classification/position.
Specifically, managers’ perception of this Midwestern state government as a learning organization differed from the perception of the professional staff.

The secondary purpose was to determine if the use of the learning constructs resulted in a perception of high performance. The findings revealed the perception of organizational learning influenced the perception of performance. Employees who scored the organization high on learning tended to also score the organization high on performance. No differences were found among the employee groups in their perception of performance.

The research findings indicate the learning organization construct variables were good predictors of performance. The variables, empowerment and individual skills growth, were dominant in the prediction relationship. Employees who scored the organization high on the performance measure individual skills growth also held a high perception of empowerment in their work environment. Higher levels of people empowerment were associated with higher levels of individual skills growth as well as customer satisfaction and new suggestions implemented.

These results were generally supportive of the theoretically expected relationships between learning organization constructs and organizational performance, although in some areas the survey data revealed differences from the findings in the literature.

**Employees’ Perception of Organizational Learning**

Survey respondents were queried on seven different learning construct measures to ascertain their perception of the government as a learning organization. Most employees scored the government high on the learning constructs, indicating that the five
learning organizational principles are practiced and utilized in the management of their daily work responsibilities and tasks.

The research findings of this study supports the literature that suggests government as a learning organization is more than skills development, but a change in how it is perceived by its employees and customers (Betts & Holden, 2003; Crossan, Lane, & White, 1999; Eskildsen et al., 1999; Longworth, 1999; Lynn, 2000; Mahler, 1997). This study focused on employee perceptions. Employees want to see a change in the culture and operational processes and procedures of the organization. These changes may be reflected in the organization’s willingness or ability to learn from mistakes as well as share lessons learned with its employees. This may be conveyed through new initiatives; adapted, revised, or renewed strategies; policies; and operational procedures. They further assert that organizational learning is intuiting, interpreting, integrating, and institutionalizing—linking the three levels of learning: individual, group, and organizational. Argyris and Schon (1996) and Eskildsen et al. (1999) referred to this as double- or triple-loop learning, respectively. In this study, the three levels of learning were found to be positively and highly correlated with 42% of respondents, indicating that opportunities for continuous learning (individual learning) are usually, or almost always, available; 67% almost always collaborate and learn from group discussions and team work (group learning); and many agreed (41%) that there are processes and procedures in place to capture and share learning (organizational learning). A high percentage of participants (45%) responded that teams and groups almost always revise their thinking as a result of group discussion or information collected. Employees’
responses to the learning measures indicated the new skills and knowledge employees obtain are perceived as being integrated and incorporated into the organizational memory.

Additionally, the research findings in this study support most of the current literature that suggests that government entities practice and apply the learning organizational principles. According to McGrath (2002) and Bales (1993), state, local, and municipal governments have the features, systems, and operational components to operate as a learning organization. McGrath further states that, although the learning organization concepts may be incorporated into government agencies, few truly realize the impact and importance of continuous learning collectively. Crossan, Lane, and White (1999) assert that an environment that fosters learning supports continual learning processes and activities. In this study, continuous learning was found to be a secondary contributor to performance. While employees reported opportunities for continuous learning exist, it was found to be a dominant factor in achieving high levels of performance. Expectations of enhanced performance associated with continuous learning are not reflected in the organizational outcomes as perceived by its employee of this Midwest state.

McGrath’s study identified the frameworks necessary for municipal governments to operate as learning organizations, while another study conducted by Garvin (1994) reflected more on the distinctive policies and practices responsible for learning organization success. The four systems identified by McGrath were organizational transformation, learning dynamics, people empowerment, and knowledge management. Several previous studies have echoed the importance of empowerment within a learning organization (Bass, 2000; Dilworth, 1996). This research revealed people empowerment
is a dominant attribute of the learning organization. In this study, 88% of respondents indicated they are encouraged to take initiative in performing their daily tasks or job functions.

This study added to the current body of research by connecting empowerment to specific performance outcomes of customer satisfaction and individual skills growth. The reasons put forth by Marsick and Watkins (2003) seems plausible: people empowerment leads to personal responsibility and accountability. Individuals own the project and process.

While this study supports most of the current literature of learning organizations, there are some conflicting findings in regards to the use of information technology. McGrath’s study of a municipal government and the application of the learning organization principles suggested that information technology was a key component of knowledge management. Watkins and Marsick (2003) also identify information technology as a knowledge management tool. In a study of police departments, Brown and Brudney (2003) suggested information technology is a vital vehicle in promoting learning in the public sector. This study examined IT and knowledge management as two distinct and separate entities. Analysis revealed knowledge management was not a contributing factor to organizational performance. Furthermore, IT appeared to be a very low contributor to organizational learning or performance. It is important to note this study pertains to the perceptions of respondents across several different domains, whereas the Brown and Brudney study focused on one public sector entity. Brown and Brudney closely examined the IT systems in place to capture, track, sort, and provide information
to advance knowledge. Brown and Brudney conducted a qualitative case study analysis, while this was a quantitative study assessing employee perception of IT.

Thomas et al. (2001) argued that information technology is a tool to store knowledge and information specific to organization routines, processes, and functions. This information can be retrieved to provide insight on current and future situations and events. They emphasized the use of technology and management information systems as mechanisms to maintain stored knowledge and information to be shared on a greater scale across organizations.

Respondents in this study may not have been aware of the IT systems in place and, thusly, did not perceive it as a significant contributor. In addition, respondents were asked if there was a change from one year to the next in IT systems’ use. The responses of participants would suggest the use and implementation of IT systems in state government are stagnant, as evidenced by 51% of respondents scoring the organization 5 or below (on a scale of 10) on this performance measure.

**Differences Among Employee Perceptions of Learning**

To analyze any differences or influences among employees’ perception of learning, responses were disaggregated according to employees’ position with the organization (manager, professional, administrative support), age, years of service, and education. The perception of learning scores was compared among the employee characteristics. When examining the responses of participating individuals, it became quite evident that there was a great degree of variance in the response of participants when viewed from a hierarchical perspective.
Managers are instrumental in defining the culture and climate in each governmental agency. Dilworth (1996) argued that leadership and two-way communication are critical to a learning organization and that leaders need to be learning-oriented, role models, able and willing to operate across departmental and organizational boundaries. Kline and Saunders (1998) stated, “Managers can no longer rely on military styles of management and instead must move in the direction of becoming teachers, coaches and facilitators” (p. 13). Research in the private and public sectors suggest executives and middle managers’ perception of learning may differ from others within the organization. Furthermore, Dilworth and Applebaum et al. (1998) postulate that middle managers help to promote the interchange of ideas and support a culture of learning.

In this study, it was found that a person’s relative position influenced their position of learning in the organization. In fact, when the study compared the perception of learning scores among the three employee groups, managers’ perceptions were found to be significantly different from professional staff. Managers scored this state government highest in learning among the three employee groups surveyed.

In contrast, Bass (2000) stated strategic leadership occurs at all levels of the organization arguing leadership has shifted from position to knowledge. He argued that management’s role is to help align staff with the organization’s mission, vision, and strategies and work to build a “cohesive” and knowledgeable workforce and environment/community. Although the perception of learning is evident at all levels of this organization, this study found very little evidence to suggest that learning is a key factor in connecting the organization to its community and workforce. The responses
indicate leadership is still very hierarchical and based on relative position and not knowledge within the organization.

According to Argyris and Schon (1996) and Senge (1990), the constant change in political leadership of government negatively impacts the transfer and institutionalization of knowledge. This conflicts with findings from this study. Overall, respondents’ perception of learning was high (5 on a scale of 6), with most individuals indicating that the organization makes its lessons learned available to all employees to some degree. Hennessey (1998), Mahler (1997), and Dilworth (1996) offer the explanation that this disconnect is a result of the organization’s culture. Top-management, typically found in government bureaucracies, can derail learning organization efforts if there is not a perception of transparency and trust among employees for management. Kline and Saunders (1998) argued that bureaucratic structures often hinder employees from seeing each other as resources. There is also a perception of inner circles and silos. In a study of managers in a government agency concerned with public welfare, Corbett and Kenny (2001) argued managers have difficulty relating competence and training needs to move the agency from single loop learning to double loop. In a reactive environment, as is often found in government, there is not a real opportunity to exercise problem-solving skills on a larger scale.

These studies specifically examined culture in one agency. It must be noted that respondents of this study represented 19 agencies within this Midwestern state government. Each of these agencies operates and has different cultures. This may have impacted perceptions of learning. A comparison of the individual state agency cultures and the impact on learning initiatives is a good opportunity for further study.
While prior research addressed executives, leadership and culture in the learning organization, this study suggests age and years of service may play a role in the creation, adoption, and maintenance of a learning organization, particularly within state government. Survey respondents in the age group 18-34 rated the organization high on learning. On the other end of the spectrum, those individuals with 16-20 of years of service also rated the governing body high on learning. There is a cohort of employees, those with more than 5 but less than 15 years of service, who indicated a perception below the average. Future research should examine the cause and implications of this perceived learning gap between the employee cohorts.

*Perception of Organizational Performance*

To assess employees’ perception of the organization’s performance, respondents were asked five questions related to performance measures. Overall, employees within this Midwestern state scored the organization 5 (on a scale of 10) on performance, consistently. Responses to these questions were compared to the responses to the employee perception of learning. Examination of the responses revealed an employee’s perception of learning influenced their perception of performance. When examining the responses of participating individuals, it became evident that individuals who scored the organization high on learning also scored it high on performance. No difference was found among the employee groups in their perception of performance.

Within the literature on learning organization principles and concepts, three patterns emerged: (1) a correlation between the learning organization principles and organizational performance, (2) collaboration and teamwork increases organizational
learning capacity and knowledge performance, and (3) leadership positively impacts performance (Argyris & Schon, 1996; Marsick & Watkins, 2003; Senge, 1990). This study supports these patterns. Organizational learning constructs and principles were positively correlated to performance ($r = .659$). The rank order of individual ($r = .621$), group ($r = .549$) and organizational ($r = .647$) learning revealed the dominance of organizational learning in linking to performance outcomes. The dimensions of learning identified in this study were found to be predictors of select performance outcomes. The primary performance outcomes were individual growth, new suggestions implemented, and customer satisfaction. Individual skills growth was positively correlated to empowering people. Higher levels of individual skills growth, new suggestions implemented, and individual skills growth are associated with higher levels of people empowerment. All of the current research on learning organization and performance identify the importance of empowerment to organizational performance. Employees must feel equipped to make decisions and take risk to correct a problem.

Prior research indicated the difficulty in adequately achieving customer satisfaction in state government (Osborne, 1993). Customer needs and wants vary greatly depending on the population and services. In this study, customer satisfaction was found to be a primary function of performance criteria. The findings suggest there is tension within this state government between customer satisfaction and continuous learning. There was evidence of discrepancy between individual expectations of customer service and the level of continuous learning found in this state government. Without surveying the public on their needs, we have little evidence to understand the basis for this discrepancy.
Inquiry and dialogue, closely associated with team learning in the literature, is argued to produce true dialogue that leads to innovation, new ideas, and the ability to solve problems at a systems level (Fritz, 1999; Senge, 1990). While this study found a correlation between team learning and performance, evidence revealed an inverse relationship between inquiry and dialogue and innovation. In fact, analyses indicated those individuals who perceived the organization as possessing high inquiry and dialogue scored the organization low on innovation (suggestions implemented) on the performance side. This contradicts the previous research. While the learning is being shared and stored in the organizational memory, it is not being acted upon to change how business is conducted. Employees are engaged in discussion or inquiry and dialogue; however, perceptions of performance do not reflect change in organizational practices as a result. Employees may feel comfortable asking questions and probing for more information, but not comfortable in taking risks or making suggestions or decisions outside of the current business norms.

Research indicates leadership is essential to the promotion of inquiry and dialogue. Strategic leadership engages and aligns each individual to the organization’s mission, vision, and values, giving credence and importance to their role in helping the organization achieve its strategic goals and purposes (Applebaum et al., 1998). Strategic leadership was identified in this study as well as previous studies as a predictor of performance. In this study, individuals who perceived high team learning and strategic leadership had low perceptions of empowerment and connecting the organization to its internal and external communities and environment. There is a paradox that leadership promotes and values learning in the organization, while reserving and centralizing
influence and decision making to those with positional authority. As David Bohm stated, “Hierarchy is antithetical to dialogue and it is difficult to escape hierarchy in organizations” (as cited by Senge, 1990, p. 245).

While the government was scored high on organizational learning, performance was perceived as satisfactory (5 on a scale of 10) consistently. Betts and Holden (2003) found some models of organizational learning produce successful programs and initiatives at many levels, but lack clarity and organization wide vision. Senge (1990), Osborne (1993), and Marsick and Watkins (2003) argued that organizations utilizing the five learning principles or learning constructs would correlate with a perception that the organization is performing well. This study’s findings linked specific learning constructs to selected performance measures addressing a gap in the literature. Environmental and other initiatives are not, however, factored into this analysis. This is an opportunity for future study.

Conclusions

The purpose of this study was to examine the relationship between Peter Senge’s five learning organization principles and knowledge performance measures within a Midwestern state government. The findings suggest that respondents believe this organization possesses the characteristics of a learning organization. A correlation between the learning constructs and performance measures were found.

While learning constructs are evident in the institutional framework, the level of performance expected or associated with learning organizations in the private sector is not found in this public sector entity. The evidence and perceived high level of learning
does not seem to have a significant impact on the overall performance of this state
government or positioned it competitively in the eyes of its employees. Leadership
appears to be effectively communicating roles and responsibilities and individuals are
collaborating; however, new ideas do not appear to be derived or new perspectives
engaged to achieve optimal performance. New programs may be developed and
institutionalized, but they are not changing or impacting how the organization operates or
members interact.

The findings in this study provide some indication that the hierarchical structure
and culture throughout this Midwestern state government has not yet evolved enough to
truly support innovation and collaboration in their purest forms; flexibility to redefine the
business parameters, and the willingness to try something new with the participation of
key players (experts and decision makers) to influence and bring about change.

Personal growth and learning (skills development) combined with the ability to be
creative in decision-making when equipped with pertinent resources and information is
vital to the organization’s learning and performance capacity. It can be concluded that
performance perception is associated with tangible evidence of key personal and
organizational lessons learned beyond simple information sharing. While there is a high
perception of learning, there is little evidence demonstrating advanced progression and
change resulting from this growth.

In addition, the age and years of service influences individuals’ perception of
learning. This researcher contends that individuals with 16-20 years of service possess a
wealth of institutional knowledge and have witnessed and possibly participated in change
efforts within the individual government agencies. Their perception of the governing
body as a learning organization may reflect learning over a period of time. Individuals in the 18-34 age group may be new to the position, thereby are more open to new ideas and learning and may be more adaptable to change and shifts in priorities and perspectives.

**Recommendations for Future Research**

This study sought to determine the perceptions individuals held about the extent to which a large Midwestern state governmental institution was perceived as a learning organization based upon Senge’s five learning disciplines. While this study found that the learning organization framework exists, there were a number of issues related to performance and learning patterns where further study is needed.

To address these matters, this researcher offers the following recommendations:

1. It is recommended that this study be replicated. To increase the precision of estimates, it is suggested that future replication study include a sampling of similar state governmental agencies throughout the United States to determine if similar results are obtained.

2. It is further recommended that a longitudinal study exploring performance and learning outcomes tied to a specific initiative be investigated. As this survey was conducted at one point in time, it does not capture learning, or outcomes of learning, still in development. In this regards, participants are responding to the current climate and operations and may not have had the opportunity to reflect on any lessons learned.

3. A comparison of learning perceptions and knowledge transfer activity under two different political administrations is recommended. To determine if
changes in the political leadership impact overall learning and performance, future studies should assess and compare the influence of the culture of the agency versus the political leadership. It is necessary to determine what most needs to be changed in order to make the culture more effective and enhance performance outcomes. This study revealed a perception of average performance indicating room for improvement. An assessment of the culture may highlight problem areas, root causes, and areas for concern particularly as it pertains to learning.

4. It is recommended that a qualitative study be conducted to ascertain managers’ perceived role as it relates to their perception of the learning organization concepts. Insights are needed on whether managers within state government perceive themselves as change agents, problem solvers, or catalysts to align the individual agencies/departments with the organizational goals and mission. A qualitative study would provide meaningful and detailed data to better understand the role manager’s play in facilitating and encouraging individual and organizational learning in the public sector.

5. A study of customer and public perception of this state government is recommended. This study focused on employees’ perceptions; however, results reveal implications on customer satisfaction. To understand the inverse relationship between customer service and continuous learning found in this study, it is suggested that a future study examine what people want from government processes and systems accordingly.
6. It is further recommended that future studies examine the role of information technology as a decision-making tool and mechanism to share and transfer knowledge within government agencies. Information technology is an integral aspect of our daily lives, particularly business operations. Yet, this study’s findings found information technology to be a minor contributor to performance perceptions. The contribution of information technology systems as it relates to organizational learning is something that must be clearly defined, observed, and examined over a period of time. There needs to be a clear understanding of what the information needs of the end user are. Understanding the purpose or role of information and technology (will it be used to make decisions or problem-solve) in government is critical for future research studies on the learning organization in the public sector. Future research should explore the impact of information technology implementation cycles on learning and the dissemination of information.

7. Additionally, it is recommended that future research examine the behavior and learning patterns of the workforce disaggregated by age or years of service. New studies should explore knowledge gaps as well as employees’ willingness to take risks, adapt, and suggest new modes of operation at the various stages within their career. This information may highlight areas for professional and skills development in current and future workforces, thereby providing themes and areas for institutions of higher education and skills training to focus efforts or enhance curriculum or training materials. As the current workforce begins to transition into retirement, organizations may
identify areas where mentoring opportunities among the new and seasoned professionals or collaborations may be beneficial in addressing knowledge and application gaps.

It is important to note, there were only eight non-white respondents to this survey, making any comparative analysis useless. Additional research on learning organization and performance perceptions of employees should include a representative sample of individuals within historically underrepresented groups to see if future studies correlate with findings of this research.
REFERENCES


Appendix A

Single-, Double-, and Triple-Loop Learning
Single-Loop Learning

Decide → Do → Observe

Double-Loop Learning

Decide → Do → Think → Observe

Triple-Loop Learning

Decide → Do → Think → Observe → Reflect
Appendix B

Participation Request Letter
Dear Civil Servant:

I would like to ask for your participation in a web-based survey. I am currently in the process of my dissertation research entitled Learning Organization Principles: The Impact on a Midwest State Government as Perceived by its Employees. This study is intended to study employee perceptions of organizational learning and performance in state government.

You are one of 381 civil servants randomly selected to participate in this survey. Even if you are not familiar with the learning organization principles and terms, it would be beneficial to this study if you could take a few minutes to complete this survey. The survey will take between 10 to 15 minutes. Your replies will be confidential and you may choose not to answer any question and simply leave it blank. Click here to access the survey.

Participation in this study is completely voluntary and there is no penalty for not participating or for withdrawing from the study. If you agree to participate in this study, your identity will be completely anonymous. The survey contains no place for you to submit a name or any other identifying factor. If you choose not to participate in the survey you may simply not complete the survey and ignore any future email reminders.

The first 100 people to submit responses to the survey will receive a gift card for a free appetizer at P.F. Chang's. Upon completing the survey, you will receive information on how to obtain your gift card. To protect the identity of respondents, all gift cards will be distributed by a third party administrator.

If you are interested in obtaining a copy of the results, you can email me directly at rosalee.billingslearush@wmich.edu for a copy of the results.

Thank you in advance for your assistance. If you have any questions or concerns, please contact me at 517-402-5790 or at rosalee.billingslearush@wmich.edu. You may also contact this dissertation Chair, Walter L. Burt at Western Michigan University (269-387-1821 or walter.burt@wmich.edu).

Link to survey: http://spreadsheets.google.com/viewform?formkey=dHlhVnR2aEZhSlAyUHVYWGZTSXZrOUE6MA.

Sincerely,
Rosalee Billingslea Rush
Appendix C

Research Question Functions Subscale
The following table outlines the learning organization functions subscale (1) level which will be used to analyze and answer research question #1. The table identifies the five principles of the learning organization reflected by each survey question. The final analysis will consist of a discussion of the research question at the subscale levels.

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Source/Variable</th>
<th>Subscale Levels - Survey Question Categorized by Five Learning Organization Principles</th>
</tr>
</thead>
</table>
| To what extent is state government being perceived by its employees as operating as a learning organization? | • Participants’ score on responses to Survey Questions 1 – 7.                   | Questions 1 focus on **Personal Mastery**  
Questions 2 = **Team Learning**  
Question 3 = **Mental Models**  
Questions 4 = **Systems Thinking** |
| Is there a difference among groups of employees in terms of their perception of state government functioning as a learning organization? | • Score of participants’ responses to Survey questions 1 - 7 & tabulation and compilations of responses to questions 13 – 18. | Same as above  
13 – 18 = demographics on individual and department. |
| How do state employees perceive the level of their organizational performance? | • Score of participants’ responses to Survey Questions 8 – 12.                  | Questions 7 = **Personal Mastery**  
Questions 5 = **Shared Vision**  
Questions 6 = **Systems Thinking** |
Appendix D

Research Questions by Category
<table>
<thead>
<tr>
<th>Survey Question</th>
<th>Personal Mastery</th>
<th>Team Learning</th>
<th>Mental Models</th>
<th>Shared Vision</th>
<th>Systems Thinking</th>
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</thead>
<tbody>
<tr>
<td><strong>Individual Level</strong></td>
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<tr>
<td>Continuous Learning</td>
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</tr>
<tr>
<td>1. People are rewarded for learning.</td>
<td>X</td>
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<tr>
<td>Inquiry &amp; Dialogue</td>
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<td>2. In my organization, people spend time building trust with each other.</td>
<td></td>
<td>X</td>
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<tr>
<td><strong>Team or Group Level</strong></td>
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<tr>
<td>Collaboration &amp; Team Learning</td>
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<td>3. Teams/groups revise their thinking as a result of group discussions or information collected.</td>
<td>X</td>
<td>X</td>
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<tr>
<td><strong>Organizational Level</strong></td>
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<tr>
<td>Systems to Capture Learning</td>
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<td>4. My organization makes its lessons learned available to all employees</td>
<td>X</td>
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<tr>
<td><strong>Empower Power Toward a Collective Vision</strong></td>
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<td>5. My organization recognizes people for taking initiatives.</td>
<td>X</td>
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<tr>
<td><strong>Connecting the Organization</strong></td>
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<td>6. My organization works together with the outside community to meet mutual needs.</td>
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<td>X</td>
<td>X</td>
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<tr>
<td><strong>Strategic Leadership</strong></td>
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<tr>
<td>7. Leaders continually look for opportunities to learn.</td>
<td>X</td>
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<tr>
<td>Performance Measurement</td>
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<td>----------------------------------------------------------------------------------------</td>
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<tr>
<td>8. Customer satisfaction is greater than last year.</td>
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<td>9. The number of suggestions implemented is greater than last year.</td>
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<tr>
<td>10. Percentage of skilled workers compared to the total workforce is greater than last year.</td>
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<tr>
<td>11. The percentage of total spending devoted to technology and information processing is greater than last year.</td>
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<tr>
<td>12. The number of individuals learning new skills is greater than last year.</td>
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</tbody>
</table>
Appendix E

Definitions of Constructs for the Dimensions of the Learning Organization Questionnaire
### Definitions of Constructs for the Dimensions of the Learning Organization Questionnaire

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a continuous learning opportunity</td>
<td>Learning is designed into work so that people can learn on the job; opportunities are provided for ongoing education and growth.</td>
</tr>
<tr>
<td>Promote inquiry and dialogue</td>
<td>People gain productive reasoning skills to express their views and the capacity to listen and inquire into the views of others; the culture is changed to support questioning, feedback and experimentation.</td>
</tr>
<tr>
<td>Encourage collaboration and team learning</td>
<td>Work is designed to use groups to access different modes of thinking; groups are expected to learn together and work together; collaboration is valued by the culture and rewarded.</td>
</tr>
<tr>
<td>Create systems to capture and share learning</td>
<td>Both high- and low- technology systems to share learning are created and integrated with work; access is provided; systems are maintained.</td>
</tr>
<tr>
<td>Empower people toward a collective vision</td>
<td>People are involved in setting, owning, and implementing a joint vision; responsibility is distributed close to decision making so that people are motivated to learn toward what they are held accountable to do.</td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Connect the organization to its environment</td>
<td>People are helped to see the effect of their work on the entire enterprise; people scan the environment and use information to adjust work practices; the organization is linked to its communities.</td>
</tr>
<tr>
<td>Provide strategic leadership for learning</td>
<td>Leaders model, champion, and support learning; leadership uses learning strategically for business results.</td>
</tr>
<tr>
<td>Knowledge performance</td>
<td>Enhancements of products and services because of learning and knowledge capacity (lead indicators of intellectual capital).</td>
</tr>
</tbody>
</table>

*Adapted from Watkins & Marsick, 2003*
Appendix F

Statistical Highlights
STATISTICAL HIGHLIGHTS
Third Quarter FY 2009-10

PROFILE OF CLASSIFIED EMPLOYEES
Average Age ...................................................................................... 46.1
Average Annual Salary .................................................................... $53,912
Average Years of Service .............................................................. 14.2

WORK FORCE CHARACTERISTICS
Females ............................................................................................ 52.2%
Males ............................................................................................... 47.8%
Eligible for Longevity ....................................................................... 74.6%
Less than Six Years of Service ....................................................... 25.0%
Six to Ten Years of Service ............................................................. 17.0%
Over Ten Years of Service .............................................................. 58.0%
Exclusively Represented for Collective Bargaining ..................... 71.7%

FEDERALLY DEFINED RACE/ETHNIC GROUP DISTRIBUTION
American Indian ............................................................................. 1.1%
Asian ............................................................................................ 1.4%
Black ............................................................................................ 17.7%
Hispanic ....................................................................................... 2.8%
White ........................................................................................... 76.6%
Not Disclosed ............................................................................... 0.4%
Appendix G

Organizational Learning and Performance Correlation
### Organizational Learning and Performance Correlation

#### Correlations

<table>
<thead>
<tr>
<th></th>
<th>Learning Organization Score</th>
<th>Organizational Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Organization Score</td>
<td>Pearson Correlation 1.000</td>
<td>.658**</td>
</tr>
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<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>110.000</td>
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<tr>
<td>Organizational Performance</td>
<td>Pearson Correlation .658**</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>110</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed).
Appendix H

ANOVA Summaries
ANOVA Summaries

Tests of Between Subjects Effects on Organizational Learning – Age

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>348.394&lt;sup&gt;a&lt;/sup&gt;</td>
<td>4</td>
<td>87.098</td>
<td>1.581</td>
<td>.185</td>
</tr>
<tr>
<td>Intercept</td>
<td>49104.306</td>
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<td>49104.306</td>
<td>891.219</td>
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<tr>
<td>Age</td>
<td>348.394</td>
<td>4</td>
<td>87.098</td>
<td>1.581</td>
<td>.185</td>
</tr>
<tr>
<td>Error</td>
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<td>55.098</td>
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<td>Total</td>
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<td>110</td>
<td></td>
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<tr>
<td>Corrected Total</td>
<td>6133.673</td>
<td>109</td>
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</tr>
</tbody>
</table>

Note: \( df = \) degrees of freedom.
<sup>a</sup> \( R^2 = .057 \) (Adjusted \( R^2 \) = .021)

Tests of Between Subjects Effects on Organizational Performance – Age

<table>
<thead>
<tr>
<th>Source</th>
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<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>196.837&lt;sup&gt;a&lt;/sup&gt;</td>
<td>4</td>
<td>49.209</td>
<td>.616</td>
<td>.652</td>
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<tr>
<td>Intercept</td>
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<td>50440.635</td>
<td>631.813</td>
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<tr>
<td>Age</td>
<td>196.837</td>
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<td>49.209</td>
<td>.616</td>
<td>.652</td>
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<tr>
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<td>79.835</td>
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<tr>
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<td>110</td>
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<td></td>
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</tr>
<tr>
<td>Corrected Total</td>
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<td>109</td>
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<td></td>
</tr>
</tbody>
</table>

Note: \( df = \) degrees of freedom.
<sup>a</sup> \( R^2 = .023 \) (Adjusted \( R^2 \) = -.014)
### Tests of Between Subjects Effects on Organizational Learning – Years of Service

<table>
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<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>197.612(^a)</td>
<td>4</td>
<td>49.403</td>
<td>.874</td>
<td>.482</td>
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<tr>
<td>Intercept</td>
<td>51287.588</td>
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<td>51287.588</td>
<td>907.200</td>
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<tr>
<td>Yrs. of Service</td>
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<td>4</td>
<td>49.403</td>
<td>.874</td>
<td>.482</td>
</tr>
<tr>
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<td>56.534</td>
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<td>Total</td>
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<td>110</td>
<td></td>
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<tr>
<td>Corrected Total</td>
<td>6133.673</td>
<td>109</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: df = degrees of freedom.
\(^a\) R Squared = .032 (Adjusted R Squared = .005)

### Tests of Between Subjects Effects on Organizational Performance – Years of Service

<table>
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<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>259.945(^a)</td>
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<td>64.986</td>
<td>.820</td>
<td>.515</td>
</tr>
<tr>
<td>Intercept</td>
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<td>705.645</td>
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<tr>
<td>Yrs. of Service</td>
<td>259.945</td>
<td>4</td>
<td>64.986</td>
<td>.820</td>
<td>.515</td>
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<td>Error</td>
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<td>79.234</td>
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<td>109</td>
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</tr>
</tbody>
</table>

Note: df = degrees of freedom.
\(^a\) R Squared = .030 (Adjusted R Squared = -.007)
### Tests of Between Subjects Effects on Organizational Learning – Education

<table>
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<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>181.873$^a$</td>
<td>4</td>
<td>45.468</td>
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<td>.526</td>
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<tr>
<td>Intercept</td>
<td>12411.124</td>
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<td>12411.124</td>
<td>218.954</td>
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</table>

Note: df = degrees of freedom.

$^a$ R Squared = .030 (Adjusted R Squared = .007)

### Tests of Between Subjects Effects on Organizational Performance – Education

<table>
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<tr>
<th>Source</th>
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<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>40.255$^a$</td>
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<td>10.064</td>
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<td>Corrected Total</td>
<td>8579.491</td>
<td>109</td>
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<td></td>
</tr>
</tbody>
</table>

Note: df = degrees of freedom.

$^a$ R Squared = .005 (Adjusted R Squared = -.033)
Appendix I

Canonical Correlation Analysis Relating Perceptions of Organizational Performance with Perceptions of Learning
Canonical Correlation Analysis Relating Perceptions of Organizational Performance with Perceptions of Learning

*Measures of Overall Model Fit for Canonical Correlation Analysis*

<table>
<thead>
<tr>
<th>Roots</th>
<th>Wilks $L$</th>
<th>$F$</th>
<th>Hypoth. $df$</th>
<th>Error $df$</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 TO 5</td>
<td>.30470</td>
<td>3.86788</td>
<td>35.00</td>
<td>414.68</td>
<td>.000*</td>
</tr>
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<td>2 TO 5</td>
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<td>1.70414</td>
<td>24.00</td>
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<td>.022*</td>
</tr>
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<td>3 TO 5</td>
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<td>15.00</td>
<td>276.46</td>
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</tr>
<tr>
<td>4 TO 5</td>
<td>.94785</td>
<td>.68533</td>
<td>8.00</td>
<td>202.00</td>
<td>.704</td>
</tr>
<tr>
<td>5 TO 5</td>
<td>.98494</td>
<td>.52003</td>
<td>3.00</td>
<td>102.00</td>
<td>.669</td>
</tr>
</tbody>
</table>

* Significant at the .05 level.
Appendix J

Human Subjects Institutional Review Board
Letter of Approval
Date: June 7, 2010

To: Walter Burt, Principal Investigator
Rosalee Billingslea Rush, Student Investigator for dissertation

From: Amy Naugle, Ph.D., Chair

Re: HSIRB Project Number: 10-06-07

This letter will serve as confirmation that your research project titled “Learning Organization Principles: The Impact on a Midwest State Government as Perceived by its Employees” has been approved under the exempt category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: June 7, 2011