DISSERTATION

USING A CONTEXTUAL PROBLEM SOLVING TRAINING MODEL TO FACILITATE LEARNING TRANSFER IN MANAGER-LEADERS

Submitted by

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WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY TELLY COURIALIS ENTITLED USING A CONTEXTUAL PROBLEM SOLVING TRAINING MODELTO FACILITATE LEARNING TRANSFER IN MANAGER-LEADERS BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

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ABSTRACT OF DISSERTATION

USING A CONTEXTUAL PROBLEM SOLVING TRAINING MODEL

TO FACILITATE LEARNING TRANSFER IN MANAGER-LEADERS

The present study was conducted to determine to what extent knowledge and skills acquired using the Contextual Problem Solving Training Model would be successfully transferred to the job. An existing behavior change model/process was adapted and used to enhance a specific leadership quality. It was hypothesized that the intervention would positively affect learning transfer in manager-leaders in the short, intermediate, and long term, and also that the Learning Transfer System Inventory Specific Scale scores would be high immediately after the intervention and remain high 60 days post intervention.

Three mid-to-upper level manager-leaders from a large U.S. company participated in a multiple baseline single subjects design to investigate the dynamics of behavior change and learning transfer. They were observed before the intervention to establish a baseline and five times after the randomly introduced intervention to assess the degree of learning transfer.

The active independent variable consisted of three aspects. The first was the intervention or training. The second was follow-up coaching, which provided participants on-going training, support, and performance feedback. The third, which contributed to motivation, was supervisor support and opportunity to use learning.

The results indicated learning transfer had occurred with all three participants. The observations of target behaviors revealed increases over the baseline ranging from 239 to 534% for the short term post intervention period, 416 to 833% for the intermediate term (30-day) observation, and 555 to 1180% for the long term (60-day) observation.

The Learning Transfer System Inventory (LTSI) scales, given immediately after the intervention, were substantially higher than the national averages on 5 out of 11 scales specific to training, including Personal Outcomes/Positive; Personal Capacity for Transfer; Perceived Content Validity; and Opportunity to Use Learning. The LTSI at 60 days remained higher than the national average on the above scales and became higher on Motivation to Transfer Training and Transfer Design.

The findings support the methodology and model developed to increase potential for learning transfer.

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CHAPTER I: INTRODUCTION

Background

Over the last seventy-five years, the study of leadership has yielded many theories, explanations, models, and structures to elucidate the qualities and characteristics of leaders. More leadership fads, fashions, and trends have evolved to distinguish *effective* leaders from *ineffective* leaders, or "non-leaders," than there have been endeavors to describe abstract art. From prevailing notions like the "Great Man" theory, which subscribes to the idea that leaders are born, not made, to the "Big Bang" concept, in which the situation and the followers combined give rise to the leader (Bennis & Nanus, 1997), none have definitively captured and transformed into one universally accepted model, the "soul" of leadership. Additionally, "Most U.S. corporations today are overmanaged and underled. They need to develop their capacity to exercise leadership" (Kotter, 1990, p. 29).

The aim of this research is to study the significance of using behavior change theory and practices adapted from Goldstein and Sorcher (1974), Baldwing and Ford (1988), Holton and Baldwin (2000), and various other learning transfer methodologies, to help manager-leaders improve their ability to perform a specific but critical leadership function. Established leadership principles and practices will be examined to identify a prominent leadership issue, upon which a learning transfer model will be implemented to achieve behavioral leadership outcomes.

It has become increasingly apparent, especially in light of current global business trends, strategies, and goals that leadership is no longer just a function of senior executives but can be found at almost all levels within organizations. To this end, Kotter (1988) believes that even lower-level managerial, professional, and technical employees require leadership capabilities to adequately function in their arena.

"The days of military command structures in which orders were announced by the CEO-generals and barked by midlevel sergeant-managers to docile private-employees who blindly obeyed them are over" (Cloke & Goldsmith, 2002, p. 4). Leadership is becoming an integral aspect of management. Many traditional hierarchical structures in which leaders govern from the top and under which, managers carrying out the commands of the executives, are giving way to organizations with fewer layers, where leadership competencies are emerging at all management levels. To highlight this point, take for example Intel Corporation. According to Helgesen (1995) their organizational chart only has six layers for 35,000 people – down from 13 layers in the early eighties. This shows that some companies are "flattening out" their hierarchical arrangements in favor of horizontal organizational structures, which place greater emphasis on self-management. However, this is not, as Drucker (1999) puts it "the end of hierarchy...In any institution there has to be a final authority, that is, a 'boss" — someone who can make the final decision and who can expect to be obeyed" (p. 11).

Leadership in the 21st Century is revamping to empower mid-level managers in organizations to accept challenges and to varying degrees take risks, to strengthen American businesses and to maintain a competitive edge in the global economy. The problem, however, is that not only are there not enough stratified organizational

"manager-leaders" within companies but many of those who are in leadership positions, either by title or job description (positional leadership), are not fulfilling their roles as leaders but continue to function as managers. There is a big difference between managing and leading. Bennis and Nanus (1997) aptly point out:

> The distinction is crucial. Managers are people who do things right and leaders are people who do the right thing. The difference may be summarized as activities of vision and judgment — effectiveness — versus activities of mastering routines — efficiency...People don't want to be managed. They want to be lead (p.20).

The dichotomy between leadership and management is starting to narrow and efficient managers must now also become effective leaders. It is time to stop looking at the CEO as the "hero-leader" (Senge, 1999) and begin to develop individual leadership capacity throughout the entire organization. "The real challenge is to combine strong leadership and strong management and use each to balance the other" (Kotter, 1990, p. 38).

But to understand the concept of leadership, as one understands the principles of management, is a little like trying to lasso a cloud – the ideals are tangible but the implementation seems elusive. Zaleznik (1977) referring to a conception of leadership based on manager vs. leader personality states:

> Is this leadership mystique merely a holdover from our childhood — from a sense of dependency and a longing for good and heroic parents? Or is it true that no matter how competent managers are, their leadership stagnates because of their limitations in visualizing purposes and generating value in work?...Vision, the hallmark of leadership, is less a derivative of spreadsheets and more a product of the mind called imagination (p. 64).

There are three very important aspects to this rationale – visualizing purposes, generating value, and imagination. It is very difficult to quantify these concepts so that any manager may execute leadership functions as effortlessly as management functions.

Within these three categories is a myriad of leadership possibilities available to manager-leaders to choose to incorporate into their job objectives. But managers can't do it all and, therefore, must be selective and choose aspects of leadership behavior that compliment their management role and style. Different situations call for different leadership approaches and applications, and no one leadership style will work in all situations (Blanchard & Hersey, 1996; Blake & Mouton, 1964).

Additionally, there must be clarity regarding some basic elements that contribute to effective leadership even in the smallest of jobs in complex organizations. Kotter (1998) includes in this category, a broader understanding of the job than just the technical requirements, good working relationships that go beyond those dictated by formal hierarchy, a track record and reputation of some credibility, and a minimum set of intellectual and interpersonal skills.

McGregor (1960) identifies four major variables known to be involved in leadership: 1) the characteristics of the leader; 2) the attitudes, needs, and other personal characteristics of the followers; 3) characteristics of the organization, such as its purpose, its structure, the nature of the tasks to be performed; and 4) the social, economic, and political milieu. This researcher believes that leadership programs that do not incorporate, at least the first three variables of the aforementioned principles into their design, are not likely to succeed. Unlike the requirements for effective management, which are simpler than those for leadership, it requires considerably more to provide effective leadership Kotter (1988).

Unfortunately, many managers *do* see themselves as leaders when in fact they're not. Peters and Waterman (1982) reported that in a psychological study, 70 percent of

male adults who were asked to rank themselves in terms of leadership, rated themselves in the top quartile and only 2 percent felt they were below average as leaders. Although, it is unrealistic to think the majority of individuals in any organization are actually successful leaders, Peters and Waterman contend that the excellent companies should acknowledge that people like to think of themselves as winners and as such, there is no reason why companies can't design systems to reinforce the notion that most of their people are made to feel that they *are* winners.

Leadership training programs may be designed in different ways and for different outcomes. Some serve merely to impart knowledge and change attitudes, in which learning is the primary focus. Others are intended to modify or change behavior, and still others attempt to do both. This study is concerned only with leadership programs designed to adjust human behavior to conform to leadership practices; that is, *behavior-change programs*. One intended consequence of such programs should be to assess if any changes in work behavior occurs after training. To do this effectively, all such programs, prior to implementation, as proposed by McGregor (1960), should include identification of the leadership characteristic(s), the attitudes, needs, and characteristics of the followers, and the organization's culture. A fourth component, although not always necessary, might also include the characteristics of the constituents. "Strategies, tactics, skills, and practices are empty without an understanding of the fundamental human aspirations that connect leaders and constituents" (Kouzes & Posner, 2002, p.23).

"Leadership inevitably requires using power to influence the thoughts and actions of others" (Zaleznik, 1977, p. 63). However, not every leader has the ability to influence others to willingly make sacrifices, and to thrive in a constantly changing world while

maintaining the loyalty and trust of followers. This researcher too often, has observed people in leadership positions who attempt to use their power to command and direct the actions of others in ways that tend to create dissension, apathy, and even subterfuge. Perhaps it is because many leaders don't really understand what it means to lead.

But good leadership requires knowledge, patience, understanding, and flexibility. Behavior change leadership programs must address issues that focus on incremental change philosophies prevalent in programs such as Alcoholics Anonymous, Weight Watchers, and Smokenders, which scale down efforts to workable tasks (Kouzes & Posner, 2002), because they realize that substantive changes don't occur over night. Such changes not only take time to assimilate into one's routine behavior but require deep understanding of complex human decisions and interactions. "Great leadership works through the emotions" (Goleman, Boyatzis, & McKee 2002, p. 3). It is the manner in which this critical element is woven into a program that separates effective behavior change leadership programs from the countless fads and gimmicks that have inundated the leadership-training world. Also, it takes time, effort, commitment, and support from senior management to launch and maintain momentum of a leadership initiative that is designed to change how people behave. Changing simple behaviors or peripheral beliefs like coming to work on time, or complementing someone for doing a good job do not require great emotional investment or effort. "But if we are asked to change a more deep-seated belief, this would be quite difficult to do without changing the shape and character of our personality" (Goldstein & Sorcher, 1974, p. 20).

The preceding statement by Goldstein and Sorcher leads to the core of leadership development and the focus of this research – how to train leaders to be effective. This

researcher believes training is the nexus between knowing how to do something and actually doing it. Training, through the use of effective behavior change models or processes, should link learning to successful behavioral outcomes.

The "model" then, serves primarily to simulate conditions under which, practical leadership applications or practices can be successfully implemented. The fundamental purpose of the model is to produce one or more lasting behavioral leadership changes within participants. It is the "antidote" to ineffectual leadership behavior. Inherent in the model's design is the presumption of the cause of the problem and the solution.

At the core of training is the issue of *transfer* (Goldstein & Sorcher, 1974), which essentially, is the ability to behaviorally reproduce or transfer what is learned in training to one's usual job. According to Brethower (1967):

> Successful training involves two phases: acquisition and maintenance of behavior. This subdivision of the training function is important because it separates the process of acquiring some particular skill from the process of examining the environment in which the employee will practice that skill...Failure looms for programmed instruction projects in which there is inadequate consideration of maintenance systems. What happens to the trainee *after* training via programmed instruction is at least as important to job performance as the training itself (p. 60).

Key to *acquisition* is learned behavior, which initially takes place during training. After that the learned behavior must be successfully transferred (applied) to the job environment where efforts must be made to maintain adequate performance levels of the acquired behavior. An appropriate maintenance system not only encourages using newly acquired behaviors but also allows opportunity to observe and measure overall effectiveness. Without the frequency of opportunity, however, where a trainee can use newly acquired skills in the work environment, behavior transfer and maintenance may

be negatively affected. Mayer and Russell (1987) believe behavior transfer is minimal unless it can be measured over an extended period of time and, this cannot occur under conditions of low opportunity.

Moreover, Marx (1982) identified relapse prevention as a key ingredient for maintaining behavioral change after a training program. Relapse prevention, a self-management technique created for treating addictive behaviors such as alcohol, drug use, weight loss, etc., was first recognized by Marx as a potentially strong influence to enhance learning transfer. It consists of a set of self-control strategies designed to facilitate the maintenance of behavior change by teaching individuals to understand and cope with the problem of relapse, and has powerful implications for the maintenance of managerial training.

In order to behaviorally reproduce or transfer what is learned in training to one's job environment, this research seeks to determine whether a particular behavior change model or process, with perhaps some minor modifications, can be applied to a wider range of training circumstances tied to, not only the acquisition of knowledge and skills, but also maintaining adequate performance levels of acquired skills and behaviors over time. This ideal should be particularly important to companies interested in providing training, regardless of scope or purpose. Otherwise, what would justify the time and expense of the training?

Following this logic, although some companies refuse to accept they lack strong leadership, others spend vast sums of monies attempting to strengthen their cadre of manager-leaders through leadership training. Nevertheless, many companies that proactively approach training do not appear to place high emphasis on examining the

"results" of the training (Olsen, 1998) and thus, are left without the benefit of knowing whether or not the training was actually successful. Only a small portion of the skills and knowledge learned during training are really transferred back to the job (Burke & Baldwin, 1999; Broad & Newstorm; 1992; Baldwin & Ford, 1988). Much of the problem lies in the fact that organizations do not expressly require that trainers or management education consultants know how to build transfer into training programs, or that they have a follow-up plan to measure the results of the training (Kelly, 1982).

Research Problem

Often times, executive sponsored leadership training programs are directed primarily at changing attitudes and behaviors of participants. Goldstein and Sorcher (1974) contend, however, even though there may be an assumption that involvement in particular kinds of exercises and simulations will allow participants to gain sufficient insight to cause them to change their operating behaviors and styles in a variety of real-life situations, in which *learning transfer* will occur, there is "no evidence to indicate that transfer takes place when participants return to their usual jobs" (p. 20). More recently, researchers have indicated that only a fraction of the skills and knowledge learned during training are really transferred to the job (Baldwin & Ford, 1988; Burke & Baldwin, 1999). The research problem accordingly, will investigate the effect a modified learning transfer process, in relation to a particular leadership skill, has on manager-leaders.

According to Goldstein (1993), transfer effects include *positive transfer, negative transfer*, and *zero transfer*. With positive transfer the experimental group performs better than a control group on the second task. In other words, what is learned can be effectively used in new contexts. With negative transfer, the experimental group performs worse

than the control group, or what is learned changes subsequent performance for the worse. With zero transfer, there are no differences in performance between the experimental group and the control group; no effect occurs.

Many leadership-training programs are not designed to account for conditions of behavior transfer. A model of the transfer process by Baldwin and Ford (1988), Figure 1, postulates how *training inputs*, *training outputs*, and *conditions of transfer* are integrally connected and how the relationship between the three components affects transfer outcomes. These elements are overlooked in many training programs. It does not matter

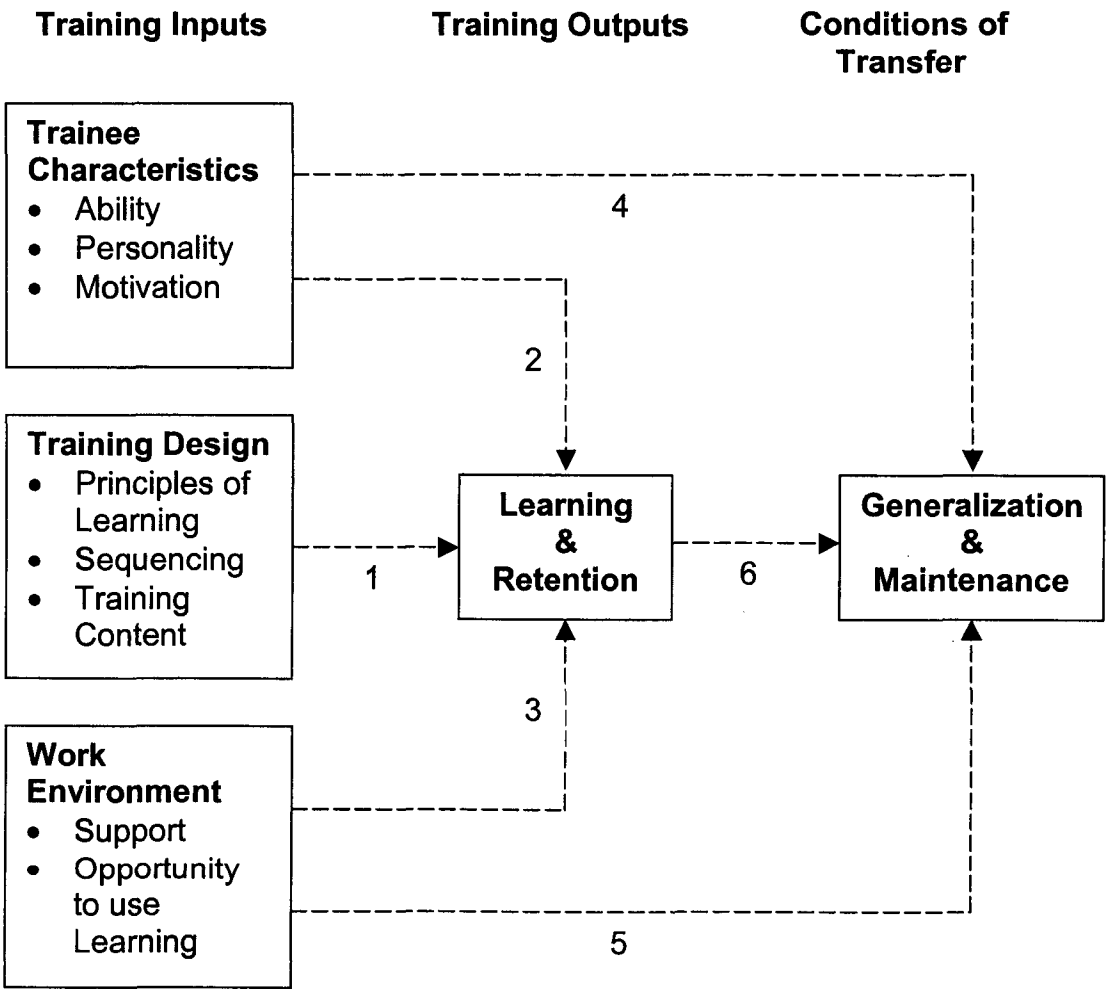

Figure 1. The Baldwin and Ford (1988) model of the transfer process.

how much training someone receives when appropriate mechanisms are not embedded within the program design to successfully link learning to changes in behavior, and so, this study will examine the efficacy of using behavior transfer techniques to connect learning to behavior.

Since many leadership programs are intended to create organizational leaders, not just dispense information for knowledge acquisition, it is imperative to know to what degree these programs are succeeding. Otherwise there may be no justification for the expense and continuation of the program. To this end, a needs analysis and post implementation evaluation must be conducted to determine to what extent a leadership program has succeeded or not succeeded, or to suggest that any significant behavioral changes or results have occurred. During the Intervention Training Phase of this study a level three/behavior evaluation will be conducted to examine the efficacy of using learning transfer techniques to connect learning to behavioral changes in work performance.

Some important aspects that will constitute the foundation of this study include the identification of the following:

1. Specific leadership behavior(s) to be included in the intervention/training.
2. The learning transfer process designed to link learning to behavioral changes.
3. Pre-test/baseline data.
4. Limitations of the study that may influence the research design methodology.

Research Hypothesis

The following research hypotheses will be addressed with a multiple baseline across subjects design:

1. An intervention based on the Contextual Problem Solving Training Model will positively affect learning transfer in manager-leaders in the short term, intermediate term, and long term.
2. The LTSI specific scale scores will be relatively high immediately after the training and remain high at 60 days past intervention.

Significance of the Study

One of the most common kinds of training conducted both internally and externally throughout many organizations is *leadership training*. Today, there are countless leadership programs available to companies and institutions needing guidance in this area. The problem, however, is not the number of available programs but rather, 1) the quality of a given leadership program to incorporate sound leadership principles based on the organization's culture and needs, 2) the inclusion of procedures that influence participants at the behavioral level, and 3) evaluation methods used to determine to what extent the program is successful.

Many manager-leaders believe they are fulfilling their leadership obligations effectively, when in fact, others see them as woefully inadequate. The reasons vary; however, a major aspect of poor leadership is lack of understanding and leadership training. Goldstein and Sorcher (1974) state:

> Supervisory training programs often emphasize issues that are theoretical, if not philosophical, and deal with aspects of management that are usually already well-accepted by most trainees at the outset of training...Most managers or managers-to-be agree that what they seek and need is very specific information about *how* to carry out all the other aspects of leadership (p. 17).

In addition to inadequate training, many leadership programs that perhaps are intended to change behavior are effectively only knowledge or learning based. This unintended consequence may result from unskilled instructional designers, trainers, or facilitators who don't know how to link learning to changes in attitude and work behavior. Bramley (1999) states:

> If the intention is to assess changes in work behaviour and effectiveness, a model which has individual learning as its main focus may well be inadequate for the purpose because it ignores key aspects of the organizational context in which the learning will be translated into effective managerial behavior (p. 146).

In a study by Olsen (1998) related to an organization's evaluation of whether or not training endeavors are achieving tangible results, Olsen aptly points out that before results can be determined, actual training skills have to transfer from the training environment to the job environment. The transfer component receives little attention because organizations are primarily interested in measuring participant reaction to training, thus bypassing an examination of whether or not transfer has really occurred. Clarke (2001) indicates that the training literature casts doubt on whether or not training actually transfers to use on the job.

During this study, an existing behavior change model/process will be modified and adapted for use, to enhance a specific leadership quality within participants, in hopes that the skill(s) will be learned and then, successfully applied (transferred) to the job environment. This is significant because, as previously stated, many leadership-training programs fall short of achieving their lofty goals of changing manager-leaders' behaviors to reflect true leadership. The success of this study centers on identifying one prominent leadership practice with which to test the dynamics of the behavior change process.

In the area of training and development there are several different ways to evaluate program effectiveness. One long-standing and widely used method separates the evaluation process into four levels of measurement – Reaction, Learning, Behavior, and Results (Kirkpatrick, 1998). Levels one and two (Reaction and Learning) are the most commonly used because they are the easiest to administer and analyze and the least timely and costly to conduct. Levels three and four (Behavior and Results) take much longer to perform, sometimes years and can become very expensive for the organization. Because of the time and expense involved in conducting level three and four evaluations most companies forgo this option and usually settle for level one and sometimes level two evaluations.

A level one evaluation, Reaction, however, is of little interest because it basically determines whether or not the participants enjoyed the program, and any program should be designed to please participants, or else the negative feedback will be a detriment to the programs success. According to Bramley (1999), regarding Reaction evaluations, "...research shows that measuring whether they thought the programme interesting, challenging, stimulating, enjoyable etc. does not tell us very much more than that" (p. 145). Level two, Learning, is integral to programs that focus on knowledge and skills acquisition. But more importantly, unless learning can be measured to insure it has occurred, it is pointless to measure behavior because the latter is totally dependent on the former. This same rule does not necessarily apply to measurements between levels one and two. The thrust, however, of many leadership programs is to influence behavior and nothing less than a level three evaluation can determine this.

The reason why Level three, Behavior evaluations are critical is because they attempt to evaluate what happens when trainees leave the classroom and return to their jobs, and how much transfer of knowledge, skills, and attitudes occurs (Kirkpatrick, 1998). Some guidelines for evaluating behavior include, allowing time for the behavior change to take place, which is a vital component of this research, conducting pre and post training evaluations, and repeating the evaluations at appropriate times.

As for level four, Results, this important and most difficult process determines what final results occurred because of attendance and participation in a training program Kirkpatrick (1998). Examples of this criterion include productivity gains, customer satisfaction, cost-savings, employee morale (for manager training), and profitability (Alliger, Tannenbaum, Bennett, Traver, & Shotland, 1997). However, Alliger, et al. (1997) due point out the inherent inability of most training efforts to directly affect results level criteria, and relate the expectations of sponsors of training programs in regard to results-level outcomes may be unrealistic.

This study is significant because it seeks to uncover to what extent a behavior change model may create significant changes in leadership behavior for a pre-existing or newly developed leadership program. The researcher has identified two critical components needed to increase the possibility of a leadership program's success. First, the direction of the leadership program should be aligned with the culture and needs of the organization. Leadership expectations should be designed in a manner that is consistent with identifying leadership gaps in management practices and then, bridging those gaps with sound leadership principles. Second, there is the matter of equipping an individual program with the essential behavior change architecture required to link

purpose with outcomes. For example, in education, one goal of a typical administrative leadership orientation program in a human resources department may provide for participants to use the knowledge and skills acquired during training to boost employee motivation, in order to increase student enrollment. However, what is often missing from the equation is the formula necessary to achieve the desired action, (to motivate people to do something, so that something else may occur). Omitting behavior change architecture from such a program, to use an automotive analogy, would be like designing a car that has an engine but no transmission.

Although generalizability to other organizations and programs may be limited because of the limitations of this study, a successful outcome may warrant further investigation beyond the leadership arena, with possible applications in other areas of training and development.

Researcher's Perspective

During the last two decades, I have been involved in crafting and conducting various kinds of training programs, workshops, and seminars intended to influence people to modify or change some aspect/s of their work related behavior/s, for the purpose of enriching their job performance, as well as their personal lives. This researcher has applied his craft to very diverse populations including people in small businesses, Fortune 500 companies, mental health agencies, government agencies, and the law enforcement community.

In 1993, this researcher began to focus exclusively on leadership development. Leadership took on special importance because throughout this researcher's professional endeavors, which have spanned over twenty-five years, he observed a plethora of

organizational management but very little organizational leadership. This researcher became disillusioned with the fact that many "so called leaders," especially within government agencies, lacked almost any capacity to embrace and practice leadership as it is intended. During the mid to late 90's this researcher began to design and implement training programs dealing specifically with leadership and team building, and continues to do so at this time.

The inspiration for this research comes out of obligation to see organizational managers and leaders improve their abilities to motivate employees through ideals consistent with leadership practices. But leadership, unlike management, requires individuals to change counterproductive attitudes and behaviors acquired over many years, such as, basing decisions on generalizations and assumptions of others, misaligned organizational leadership values and principles, or inflexibility due to rigid belief systems. This aspect of leadership is critical to any process that seeks to improve an individual's capacity to lead. In fact, for most senior executives, providing leadership and not just authoritative expertise is extremely difficult because to make change happen, they first have to break long-standing behavior patterns of their own, and provide leadership in the form of solutions (Heifetz & Laurie, 2001).

Furthermore, the problem with many of the various leadership development processes is the way in which the models have been constructed. Although many leadership models are intended to both, demonstrate effective leadership practices and help transform non-leaders into leaders, they do not yield results specific to their goal. Essentially, they generate a *cause and effect process* where, the *effect* does not match up to the standard of what it is designed to do. This occurs because the most important and

complex ingredient, understanding and *human behavior management* is usually left out of the equation. A process for developing leaders can succeed only when it is predicated on focusing on changing human behavior and allotted a realistic time frame to take root and flourish.

During a recent conversation with a senior executive of a national organization regarding a newly developed leadership program, this researcher concluded that what was being touted as a new leadership orientation program, was nothing more than a management-training program. Often times, training and development practitioners mislabel management programs under the rubric of leadership. Many, "so called leadership programs" are simply old ideals in new packages, or management processes retrofitted to look like leadership programs.

This researcher hopes that this study will lead to a quantifiable process, through which leadership practices and behaviors may be assimilated into daily work activities for organizational managers and leaders.

Definition of Terms

The following terms will be defined to present a standard comprehension regarding their use and interpretation throughout this study:

Conditions of Transfer: Encouragement and support from the supervisor to attend training and use acquired knowledge and skills, followed by immediate opportunity to apply skills within the job context.

Far Transfer: The extent to which the trainee applies the training to situations that are novel or different from the ones in which s/he was trained (Laker, 1990).

Intermediate Term Transfer: The amount of transfer observed at the end of a thirty-day period after the participant has received intervention/training.

Leader: A person who "establishes direction by developing a vision of the future," "aligns people by communicating the direction by words and deeds," "motivates and inspires people to overcome major political, bureaucratic, and resource barriers," and "produces change, often to a dramatic degree" (Kotter, 1990, p. 41).

Leadership advancement, leadership orientation, leadership development, leadership training: These are synonymous terms that generally refer to some type of leadership training program.

Long Term Transfer: The amount of transfer observed at the end of a sixty-day period after intervention/training has been received by the participant.

Management: Management is "about coping with complexity" (Kotter, 1990, p. 39).

Manager: A person who "plans and budgets by setting targets or goals for the future," "organizes and staffs by creating an organizational structure and set of jobs," and "controls and problem solves by monitoring results versus the plan in some detail, both formally and informally, by means of reports, meetings, and other tools," (Kotter, 1990, p. 41).

Near Transfer: The extent to which the individual applies what was acquired in training to situations that mirror the ones in which s/he was trained (Laker, 1990).

Participant(s): A person, or persons participating in a leadership development program.

Short Term Transfer: The amount of transfer observed at the end of a seven-day period after the participant has received intervention/training.

Training Inputs: Factors, which include training design, trainee characteristics, and work-environment characteristics (Baldwin & Ford, 1988, p. 64).

Training Outcomes/Outputs: The amount of original learning that occurs during the training program (Baldwin & Ford, 1988, p. 64).

Trainee Characteristics: Motivation to acquire new skills during training and to maintain and use those skills on the job.

Training Design: In this study, the design is based on behavior change theory and is the intervention or active independent variable.

Learning transfer, transfer of training: For transfer to have occurred, learned behavior must be generalized to the job context and maintained over a period of time on the job (Baldwin & Ford, 1988, p. 63).

Work Environment: The place or location where favorable conditions for *learning transfer* exist.

Assumptions of the Program Design

The researcher, for the purpose of establishing the premise and necessity for this program design, makes the following assumptions:

1. A developmental process that emphasizes only knowledge acquisition is ineffective in changing behavior.
2. Learning must precede any attempt to change behavior.
3. Organizational leadership program design is often incongruent with intended outcomes.

4. An existing behavior change process can be modified to bring about positive changes in leadership behavior.

Delimitations

The researcher will limit this study to a single organization and confine the research to three mid-level managers only, so generalizability to other organizations and programs will be limited. Furthermore, experimental and control groups will not be used to test results, which may limit internal validity. However, the multiple baseline across subjects design with random assignment to the start of the treatment enhances internal validity.

Limitations

The success of this research hinges on the participation of human subjects, specifically corporate mid-level managers. However, due to the current national economic down turn, layoffs are outpacing employee hiring, which in turn is causing increased workloads for many managers. The repercussions to this research are that managers are reluctant to extend themselves to ancillary activities that take them away from their main duties and responsibilities, and senior executive sponsors are more likely to shy away from committing members of their organizations to participating in experimental research projects. Also, reliability and validity of the observations couldn't be checked, so it is possible that there is bias in the observations.

Another limitation encompasses the degree to which participants will answer truthfully on a given leadership inventory. Although they will be informed that the results will be kept confidential and examined only by the researcher, there is no way to completely control for this variable.

Finally, due to the intended small sample size, based on the aforementioned limitations, the research design will employ a "multiple baseline across subjects design."

CHAPTER 2: LITERATURE REVIEW

This chapter will examine a review of the literature pertaining to learning transfer and behavior learning theory, and identify a leadership construct to use as the backdrop or supporting structure, for the purpose of constructing a hybrid *learning transfer* model.

Leadership

Over the past century, leadership theory and practice has embraced various ideals in efforts to, not only define its inner nature but also provide a coherent foundation upon which, practical applications by means of human leadership development could be constructed. Endeavors to pinpoint a precise definition of leadership have yielded many descriptions and characterizations, but due to the expanse of conceptual applications of leadership, to this day, there is no singular accepted definition that cuts across all boundaries.

Although thousands of empirical investigations of leaders have been done in the last seventy-five years, no clear and unequivocal understanding exists as to what distinguishes leaders from non-leaders (Bennis & Nanus, 1997). Kouzes and Posner (2002) state, "...at its root the word *lead* comes from an Old English word that means 'go, travel, guide' " (p. 327). The most basic and least descriptive definition comes from Webster's Encyclopedic Unabridged Dictionary, which defines leadership as "the position or function of a leader" (p. 814) and leader, as "one who or that which leads" (p. 814). This facile definition underscores the immensity of trying to define such an ethereal

concept. For general purposes, only the simplest and least descriptive characterization can be fashioned to intersect the myriad applications and virtues associated with this ideal. According to Yukl (1981), "Further confusion is caused by the use of other imprecise terms such as power, authority, management, administration, control, and supervision to describe the same phenomena...Researchers usually define leadership according to their individual perspective and the aspect of the phenomenon of most interest to them" (p. 2).

There is consistency, however, among some noted theorists and practitioners, as to the nature of leadership. Burns (1978) for example, looks for patterns in the origins and socializing of persons that account for leadership. He considers "truly legitimate only those acts of leaders that serve ultimately in some way to help release human potentials..." (p. 5). Similarly, Kotter (1988) states "Effective leadership is defined as leadership that produces movement in the long-term best interests of the group(s)" (p. 5). McGregor (1960) noted this "human aspect" of leadership contrasts greatly from the earlier notions that depicted great leaders as individuals who lead through direction and control; a form of leadership based on the precepts of Theory X, in which the average human being is not motivated to work and, therefore, will avoid work when possible, thus forcing management to counteract this inherent human tendency.

Servant Leadership

Creating some distance from the leadership ideals of the Industrial Revolution era and pre-World War II, and assumptions that leaders are neither "born" nor "made," Burns (1978), stated that the focus of revealing leadership gradually shifted from attempts to identify universal leadership traits in magnanimous individuals, to studying leadership

from the perspective of the followers' desires and needs. To this end, principles of "servant leadership" began replacing "direct and control" practices of influencing people. The current trends in leadership focus on positive relations between leaders and followers, where good leaders are also good followers.

The field of leadership is no longer the exclusive property of empirical investigation and scientific management. Although scientific inquiry will most likely continue, greater emphasis is being placed on the social parameters of leadership. For instance, to conceptualize the leader as "servant," DePree (1989) references a biblical passage, in which he illustrates the words "one who serves" of the gospel writer Luke, to describe the leader's role (p.12). The overall importance of the servant leader is to allow followers to reach their potential. In essence, the desires and growth of the followers supersede those of the leader. This shift in values brings to light a "moral based" leadership style that is conscientious of the positive or negative affect it imposes on people. "Moral leadership emerges from, and always returns to, the fundamental wants and needs, aspirations, and values of the followers" (Burns, 1978, p. 4).

Follower Based Leadership

Greenleaf (1977) believes in the virtues of servant leadership, in that the leader is a servant first by making sure that other people's highest priority needs are being served. He contends what truly defines a leader is the ability to "automatically respond to any problem by listening *first*" (p. 117). Analogous to DePree (1998), Greenleaf also refers to spiritual scripture when he states "Remember that great line from the prayer of St. Francis, 'Lord grant that I may not seek so much to be understood as to understand' "

(p.122). Bogue (1994) concludes that leadership "is a venture in moral philosophy" (p. 145).

Similar to the way in which "cream rises to the top," certain immutable characteristics of leadership have emerged that suggest leadership cannot be described simply based on empirical observations emanating from the actions and styles of individuals who control the process at the top. Rather, it is those individuals who are "controlled by the process" that constitute to what degree an individual leader is effective and to what end leadership is really leadership. DePree (1989) states, "The signs of outstanding leadership appear primarily among the followers" (p. 12). Again, the shift becomes obvious as to the direction, in which leadership should be headed. Although no one may ever agree on a precise definition, it is becoming more apparent that to understand its fundamental nature is to understand its fundamental affect on others.

In summary, during the last seventy-five years of leadership investigation and development, so many theories spanning so many disciplines of leadership have evolved that it has become virtually impossible to extract a meaning of leadership beyond a rudimentary definition that serves to placate the casual observer. Quite simply, leadership cannot be capsulized due to the enormity of its intricacies and great span over unrelated fields. However, by narrowing leadership to a particular area such as business or corporate leadership, it is becomes easier to conceptualize and define it beyond exiguous offerings.

In this research, leadership will be examined in an organizational/business context and will be used as a platform to identify ethical and practical management behaviors, in order to strengthen manager-leaders' skills and job performance. The works of Bennis,

Burns, DePree, Greenleaf, McGregor, et al., thus become integral to identifying and understanding the true nature of leadership. What has radiated from the hub of corporate leadership, for example, is a moral precept around which a philosophy based on providing for the overall good of the follower, has taken precedence. Terms such as *servant-leader,* Greenleaf (1977), *servant- exemplar,* Bogue, (1994), *leader-as-steward,* DePree (1989), have heralded a new era of leadership. Leadership has been elevated from its "not so humble beginnings" of direction and control to a more noble appreciation that attempts to provide for the common good.

Problem Solving and Leadership

According to Heifetz and Laurie (2001) "...many executives reach their positions of authority by virtue of their competence in taking responsibility and solving problems" (p. 544). Leadership and problem solving are inexorably linked. Power rests in the hands of those individuals who are most central to solving an organizations crucial problems and ensuring the company's long-term viability (Kouzes & Posner, 2002). Therefore, a characteristic of leadership must include the ability to solve problems. One example of excellent problem solving occurred during the early 1980's, when Johnson & Johnson learned that someone was removing packages of the company's Extra-Strength Tylenol painkiller from store shelves and was replacing them with capsules filled with cyanide. Seven unsuspecting customers died after ingesting the painkiller. The incident resulted, not only in removing Tylenol from stores throughout the country in spite of the belief that contaminated capsules would be found only in Chicago but also in quickly spending a considerable amount of money in developing tamper-proof packaging (Fink, 1986).

The problems business leaders face can range from serious problems that require immediate attention, as in crisis management, to less severe kinds of problems that can be postponed and handled at a later time. Inevitably, leaders will find themselves in a position where they will have to choose among many pressing problems, any of which could legitimately occupy the best efforts of the organization. By controlling the order in which organizational problems are handled, leaders maintain control over the human resources and budget of the organization (Smith, 1997).

Looking at it from another perspective, problem solving can be more like damage containment (Kouzes & Posner, 2002). By allocating more resources to opportunities, leaders can safeguard against potential problems before they arise, hence influencing uninterrupted productivity, activity, and organizational goals. Roberts (1987) relates, with reference to the leadership style of Attila the Hun that the Huns focused on opportunities rather than on problems and that some Huns had solutions for which there were no problems.

In summary, a leader must possess the ability to solve difficult or complex problems, and anyone aspiring to lead, who cannot cope with stressful situations which require excellent problem solving skills and abilities, should forget about "picking up the gauntlet." While, many leadership characteristics, such as, style, temperament, values, humility, etc., may vary from leader to leader, or for some, not even be entirely necessary, it is certain that without the ability to successfully solve problems no one can truly be called a leader.

Social-Learning Theory

Much of what is currently known and applied in the field of learning transfer, especially as it relates to behavior modeling, may be directly attributed to the noted 20th Century behavior psychologist Albert Bandura and his research involving social cognitive theory. Social learning is based on acquiring behaviors by observing and imitating others within a social context (Kreitner & Luthans, 2001). According to Boeree (1998), one of the studies for which Bandura is most noted is the *bobo doll studies.* The study, essentially involves making a film of a young woman beating up an inflatable clown doll named bobo, and then showing the film to a group of kindergarteners. After viewing the film of the young woman kicking, punching, striking the doll with a hammer, and shouting various aggressive phrases, the young students were taken to a playroom and allowed to play with a brand new bobo doll and a few little hammers. Observers stood by to take notes. As one might expect, many of the children began beating up the doll in a similar fashion to what they observed in the film.

Boeree (1998) brought to light the significance of the experiment in that the "children changed their behavior without first being rewarded for approximations to that behavior" (p. 2). Boeree emphasized the point that although what had occurred may not have seemed extraordinary to the casual observer, it didn't fit so well with standard behavioristic learning theory. This is consistent with Locke (1977) who examined four behavior modification techniques – programmed instruction, modeling, performance standards with feedback, and monetary incentives, commonly used by organizations, and determined that they were not behavioristic. Skinner pointed out behaviorism asserts that

human behavior can be understood without reference to states or actions or consciousness and that the environment is the ultimate cause of all thinking. People's minds have no causal efficacy; their thoughts are mere by-products of environmental conditioning and affect neither their other thoughts nor their observable actions (cited in Boeree, 1998). Parry and Reich (1984) relate Skinnerian learning theory is behavior shaping, accomplished as learners experience the consequences of their own actions. Positive consequences increase the likelihood that behaviors will be repeated and eventually will become a part of regular conduct, where as the opposite is true of negative consequences. Under this ideology the key to behavior shaping is reinforcement. Bandura's experiments contradicted this notion. Bandura (1997) stated "Having acknowledged the reality of bi-directional influence, Skinner (1971) negated it by reasserting the preeminent control of behavior by the environment: ' "A person does not act upon the world, the world acts upon him' " (p. 9). Bandura disagreed with this conception and related that the major problem with Skinner's analysis was that it depicted two-way causality between people and environments as one-way control by an autonomous environment. Bandura called the phenomenon of acquiring behaviors by observing, observational learning or modeling, and his theory is usually called social learning theory. Social learning theory is the basis upon which (Burke & Baldwin, 1999; Baldwin & Ford, 1988; Latham & Saari, 1979; Goldstein & Sorcher, 1974) and other learning transfer researchers have constructed their learning transfer models.

Directly related to modeling is what Bandura (1986) refers to as *vicarious capability.* Essentially, it is the result of learning by observing other people's behavior and its consequences for them. Bandura challenged operant conditioning as well as

radical behaviorism and observed that mental cues and memory aids help people learn and retain behavior more efficiently that trial-and-error shaping (Kreitner & Luthans, 2001). People have the capacity to learn by observing the behavior of others to acquire rules for generating and regulating behavioral patterns. As Robertson (1990) noted, "...vicarious learning is the anticipation of the consequences rather than direct experience of them that brings about a change in behavior" (p. 118). Bandura believes that this *abbreviated* process through acquisition learning is vital for both development and survival. "The more costly and hazardous the possible mistakes, the heavier must be the reliance on observational learning from competent exemplars" (Bandura, 1986, p. 20).

Bandura (1986) suggests that people have evolved and advanced vicarious learning capability because humans have few inborn patterns, and also because a person's remarkable flexibility places high demand on learning. Therefore modeling is an indispensable aspect of learning and some complex skills can be mastered only through the aid of modeling.

Bandura's earlier work in 1977 and later updated in 1986 is based on a model of *reciprocal determinism,* which suggests that social cognitive theory favors a conception of interaction based on "triadic reciprocality" of *person, behavior*, and *environment,* Figure 2. As Bandura (1977) put it, "...psychological functioning is explained in terms of personal and environmental determinants" (p.11). What the model in Figure 2 depicts is the interconnectedness of the factors that contribute to the production of effectiveness, rather than the immutable doctrine that actions are predetermined by a prior sequence of causes operating independently of the individual.

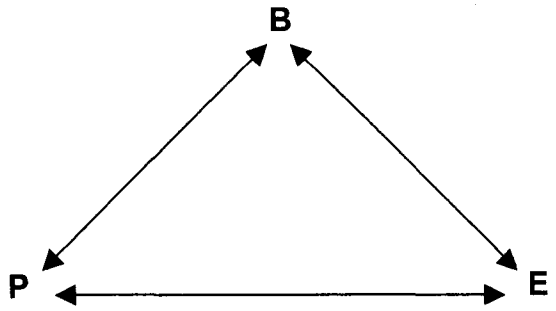

Figure 2. The Bandura (1986) schematization of the relations between the three classes of determinants in triadic reciprocal causation.

Modeling is a powerful method of influencing human behavior to the degree that it impacts the level or manner, to which an individual may respond to a particular observation. *Inhibitory* and *distinhibitory* effects are modeling influences that serve to strengthen or weaken inhibitions over behavior previously learned (Bandura, 1986). When a person experiences an inhibitory effect to a behavior being modeled, reduced performance will occur within that individual to the extent that actions will become generally more restrained as a result of seeing models experience negative consequences. However, when a person experiences a distinhibitory effect to a behavior being modeled, increased performance over previously evident inhibited behavior will occur within that individual as a result of having seen others engage in threatening or prohibited activities without experiencing adverse effects.

Goldstein and Sorcher (1974) considered inhibitory and distinhibitory effects when they developed the criteria for their "modeling" component. The supporting evidence of the influence of models in activating, channeling, and supporting the behavior of others is abundantly documented in both laboratory and field studies conducted by Bandura (Bandura, 1986).

Behavioral Learning Theory

A very important aspect of behavior modeling that cannot be overlooked is behavior modification – the application of behavioristic conditioning principles to practical problems (Locke, 1977). Although the term "behavior modification" was commonly used during the 1970's, particularly in education, psychology, and the mental health field, when used today in the context of behavior modeling for organizational training, it is generally referred to as organizational behavior modification (O.B. Mod.), or applied behavior analysis, or organizational behavior management (Kreitner & Luthans, 2001).

According to Kreitner and Luthans the primary contributions of O.B. Mod. are 1) emphasis on observable employee behavior; 2) recognition of the impact that contingent consequences have on performance; 3) recognition that positive reinforcement is more effective than punishment when managing employees; and 4) a demonstrated, causal effect on the bottom-line performance of employees. The great benefit of using O. B. Mod. is that it allows human resource managers, researchers, trainers, etc., to deal with something they can see, record, and measure.

Additionally, "O. B. Mod.'s method is to increase desirable behaviors (those that contribute to goal attainment) with positive reinforcement instead of decreasing undesirable behaviors (those that diminish goal attainment) with punishment" (Kreitner & Luthans, 2001, p. 52). Goldstein and Sorcher (1974) believed they could improve the competence of managers to handling subordinates by using behavior modification principles as a basis for their supervisory development program.

Behavior Modeling

The core of behavior modeling involves trainees observing a brief sequence of models performing examples of target behaviors usually accompanied by visual and oral repetition of key learning points. Next, trainees rehearse or role play the event and then receive feedback. After training, attempts are made to transfer the new behavior to the job environment.

According to Ford and Weissbein (1997) "In transfer research, there are two key situations or environments that a person works within — the training environment and the transfer environment" (p. 37). The training environment consists of the individual characteristics of the trainee and the training design, which impacts knowledge and skill acquisition. In the transfer environment trainee coaching and support, and opportunity to use interact with the trainee characteristics to impact the application of knowledge and skills brought to the job.

Among the learning transfer models founded on behavior modeling theories, three prominent models have consistently been referred to in the literature during the last twenty-five years or so.

Applied learning – 1974. Goldstein and Sorcher (1974) were the first to introduce Bandura's vicarious learning to the industrial/organizational psychology literature when they developed a systematic approach to train supervisors to function more effectively in the manufacturing industry.

It was a solution to providing training, in order to change behavior, instead of using a theoretical basis of instruction to provide only perspective about the nature of supervision. The model was designed around how people learn many other kinds of

interpersonal behavior – through imitation, practice, and reinforcement and was primarily concerned with interpersonal behavior. The most relevant aspect of Goldstein and Sorcher's model, as it pertains to changing behavior, has to do with their operational definition of the interpersonal role of the supervisor with respect to influencing or motivating others and ultimately, bringing about change in their on-the-job behaviors.

The primary focus of the model deals with changing behavior without going through the diversionary process of attitude change because if behavior changes, then it is more likely that attitudes will become consistent with that behavior. Goldstein and Sorcher (1974) refer to Festinger's cognitive dissonance theory and research findings "which suggest that human beings are uncomfortable when their attitudes and behaviors are not in harmony with each other, and that they will actively seek to obtain consistency or accord in their behavior and their beliefs" (p. 15).

In what Goldstein and Sorcher (1974) defined as the traditional model of learning, attitudes lead to behaviors, and when attitudes changed, behaviors changed. To qualify this model, when attitudes changed but there was no change in behavior, then other conflicting attitudes or pressures of reality blocked behavior change. In their revised model, before behavior can change, attitudes must be accompanied by modeling, role-playing, and reinforcement.

Goldstein and Sorcher (1974) developed the concept of "Applied Learning," which is the basis for the process of modeling, role-playing, reinforcement, and transfer training. The chief goal of the model is to insure the transfer of training (learning transfer) to the job. For this to occur, the model must rely on a strong behavioral component, which essentially establishes the model's foundation and ultimately, its

success. They also point to the failure to specify concrete behavioral goals as one of the main reasons why many training programs do not work. They believe that both the instructor and the participants must agree upon behavioral outcomes or training targets. Otherwise, the training program will not succeed.

Although the research using this model was centered primarily on the role of the supervisor in industry, Goldstein and Sorcher (1974) state, "Applied Learning is equally applicable to a variety of situations involving people carrying out an occupational role. For example, these principles apply to educational environments where teachers may need to learn or improve their skills in handling specific classroom situations" (p. 21). Though Goldstein and Sorcher contend that what one chooses to teach is a value judgment, "the means by which one may learn can, within limits, be utilized equally well across a very wide variety of skills" (p. 69). In other words, the applied learning model has considerable practical value in areas other than just the manufacturing industry.

Flaws in behavior modeling. Behavior modeling has been well received in the training and development community but there are flaws in the process that must be addressed. Of most importance, Parry and Reich (1984) claim the models are too simplistic. They attempt a "one size fits all" approach to training. That is, trainees are conditioned to think that the approach they are learning is what should be used to handle all situations. Today's manager-leaders are able to assess alternative methods of dealing with the modeled situations that may not necessarily be congruent with what they have been taught but more are in line with their own work environment. Parry and Reich believe that behavior modeling should be more than "behavior mimicking" and that instructors must become more process-oriented and accepting of alternatives.

Next, theory is lacking. Today's trainees are better educated than ever. They don't just want to be told how to do something they also want to know why. They are more likely to question methods and procedures, unless they understand the underlying concepts and principles. Therefore, it is imperative to explain the principles and theory underlying the training and to enact them in class.

Parry and Reich also point out that wrong examples are not used. They argue that sometimes more can be learned from analyzing incorrect or inappropriate behavior. But most notably, they relate that transfer of training is weak. Learners are not self-motivated, participants fail to apply what they learn, and the greatest single weakness of learning transfer is the absence of a strong maintenance system to recognize and reinforce the new behaviors back on the job. Kelly (1982) states, "Few educators are trained to, or expected to offer programs designed for transfer of knowledge and skills. Few corporations are prepared to, or expected to facilitate transfer" (p. 102). Parry and Reich's solution is to 1) equip trainers with the tools and techniques for coaching and mentoring, 2) require action plans for participants and have post-training meetings at which participants and their supervisors report on the successes and failures experienced in applying the new behaviors, and 3) provide participants and their supervisors with checklists and planning sheets to gain leverage against the constraints that are at work back on the job.

In summary, since the inception of social learning theory, several notable learning transfer processes and models have been developed during the last quarter of the 20th Century, dedicated to improving conditions under which learning transfer can successfully take place and be maintained over a period of time.

At the forefront of social learning theory was the concept and practice of observational learning or modeling, involving social cognitive theory Bandura (1977). Bandura challenged the notion of operant conditioning and radical behaviorism and demonstrated how people could learn by observing the behavior of others to acquire rules for generating and regulating behavioral patterns. He called the process vicarious learning (Bandura, 1986).

During the mid 1970's, Goldstein and Sorcher (1974) developed a systematic approach to train supervisors to function more effectively in the manufacturing industry, using a process based on behavior modeling (observational learning) and principles of learning transfer. Their efforts proved successful. Latham and Saari (1979) examined the effects of behavioral modeling used by (Goldstein & Sorcher, 1974) in similar research and demonstrated that the integration of both cognitive and behavioristic principles within the context of social-learning theory did bring about a relatively permanent change in supervisory behavior.

Baldwin and Ford (1988) followed suit and continued to improve upon the works of their predecessors. They incorporated several elements of Goldstein and Sorcher's (1974) model and included new aspects of learning transfer in their model of the transfer process, the most noted being conditions of transfer. Eventually, Holton and Baldwin (2000) refined Baldwin and Ford's model and developed "The Conceptual Framework for Managing Learning Transfer Systems," which provides a more intervention-oriented approach to how organizational systems can be changed to enhance learning transfer.

However, as Parry and Reich aptly pointed out, there are flaws in behavior modeling. But provided that the context of the flaws is not overlooked, then there is ample room within which to rectify the inconsistencies and create viable solutions.

Learning Transfer

The Transfer Process

Goldstein and Sorcher's (1974) model of transfer of training separates the transfer process into four basic categories: *modeling, role-playing, social reinforcement, and transfer of training.* Although the entire process could come under the heading "Transfer of Training" or "Learning Transfer," the researchers designated the specific taxonomy "transfer of training" as one of the four primary components. Included within the category are: *general principles, response availability, identical elements,* and *performance feedback.*

Two of the fundamentals, identical elements and general principles, are identified in the literature as classical approaches to training (Baldwin & Ford, 1988; Goldstein & Ford, 2002; Laker, 1990; Leifer & Newstrom, 1980). Identical elements, originally proposed by Thorndike and Woodworth (1901), presumes a greater probability of transfer when a higher percentage of identical elements or characteristics exists both in the training and application settings. The concept of general principles is based on providing trainees with general rules and theoretical principles, so that what is learned may not only be satisfactorily demonstrated during the training, but also applied contextually on the job (Baldwin & Ford, 1988; Goldstein & Sorcher, 1974). Performance feedback, "reinforcement that will decide what happens at the work site," and response availability "the response or behavior that has been emitted most frequently in the past will be more

likely to occur on subsequent occasions" (derived from research on overlearning), (Goldstein & Sorcher, 1974) are not included in the classical approach. However, all four factors of Goldstein and Sorcher's transfer of training component are incorporated within the *Training Design* in Baldwin & Ford's 1988 Model of the Transfer Process, Figure 1. Irrespective of the placement of these factors, a collective approach of all four components – modeling, role-playing, social reinforcement, and transfer of training, should be considered to assure higher probability of learning transfer from the training process.

Supporting Evidence for Social-Learning

In efforts to expand on social-learning theory, as proposed by Bandura (1977), and to examine the effects of the behavioral modeling program developed by Goldstein and Sorcher (1974), Latham and Saari (1979) conducted similar research to increase the effectiveness of first-line supervisors in dealing with their employees. According to Latham and Saari "Social-learning theory explains human behavior in terms of a continuous reciprocal interaction among cognitive, behavioral, and environmental determinants" (p. 239). They reject the idea that behavior is due solely to cognitive or to environmental variables and establish this premise by pointing out that a control group consisting of people who cannot think and similarly, a control group for which there is no environment would have to exist to prove otherwise. Of course, this is impossible, which leads to the premise "social-learning theory specifically acknowledges that human thought, affect, and behavior are influenced by observation as well as by direct experience...and that people do not merely react to external influences but actually select, organize, and transform stimuli that impinge on them " (p. 240). This is significant

because it purports that people can be influenced by observations in such a manner that they may transform the stimuli of observation and direct experience into specific actions, which they have selected and organized into effective behaviors. This is critical to the development of a leadership program intended to change human behavior.

Further, Latham and Saari (1979) resolve the question of whether a reinforcer strengthens preceding responses or whether it facilitates learning anticipatorily through it's effects on attentional, organizational, and rehearsal processes by citing laboratory experiments by Bandura, indicating that learning is achieved more effectively by informing observers in advance the consequences of engaging in a specific behavior than by waiting until the behavior is demonstrated and then administering the reinforcer. In other words, it is more likely that an individual becomes a more effective learner when given the opportunity to observe in advance a specific behavior, rather than when being allowed to personally demonstrate the behavior and then being administered the reinforcer. Latham and Saari (1979) state, "Observer attentiveness to and learning from the model is increased when he or she knows that the consequence of a model's behavior is either a valued outcome or the avoidance or removal of a punishing stimulus" (p. 240).

Using the modeling theory as a basis of learning, Latham and Saari (1979) examined the effects of a behavioral modeling program developed by Sorcher (Goldstein & Sorcher, 1974) to increase the effectiveness of first-line supervisors in dealing with their employees. In their application of the program using control and experimental groups, they found evidence in support of the social-learning theory, as a behavioral modeling tool for improving work performance. They were able to demonstrate "that the integration of both cognitive and behavioristic principles within the context of social-

learning theory brings about a relatively permanent change in supervisory behavior..." (p. 245).

Robertson (1990), however, contends that the record of behavior modeling training in industrial settings suggests that it is a promising technique rather than one, which is conclusively valid. He basis his argument on research reports of behavior modeling techniques that describe training procedures which do not incorporate attempts to operationalize all of the main features of vicarious learning theory. Robertson suggests that vicarious learning is a pervasive phenomenon and will occur regardless of theoretical component processes that are weakly incorporated into the learning situation. He also introduces the possibility that the theory of goal-setting proposed by Locke, may be a more prudent theoretical basis for behavior change. In more recent literature, goal-setting is also supported by (Kreitner & Luthans, 2001; Kreiger, Ford & Salas, 1993; Broad and Newstrom, 1992; Gist, Bavetta, & Stevens, 1990; Wexley & Baldwin, 1986).

The transfer process – 1988. The Baldwin and Ford (1988) model of the transfer process includes three sequences of events: Training Inputs, Training Outputs, and Conditions of Transfer, Figure 1. Under Training Inputs are *trainee characteristics, training design*, and *work environment*. Under Training Outputs is *learning* and *retention*. Under Conditions of Transfer is *generalization* and *maintenance*.

Similar to Goldstein and Sorcher's (1974) model, Baldwin and Ford's model incorporates identical elements and general principles in the training design. But it also includes *stimulus variability* and *conditions of practice*. "Stimulus variability is the notion that positive transfer is maximized when a variety of relevant training stimuli are employed (Baldwin and Ford, 1988). Also included within conditions of practice are two

particular design issues, *overlearning* and *feedback* that were part of Goldstein and Sorcher's model. Overlearning is the principle of transfer, which stipulates that the greater or higher the degree of original learning and understanding, the greater the probable level of subsequent transfer of knowledge and skills to the job (Goldstein, 2002; Goldstein and Sorcher, 1974). It is included under the heading "Response Availability." Stated another way, McGehee & Thayer describe overlearning as a process of providing trainees with continued practice far beyond the point when the task has been performed successfully (cited in Baldwin & Ford, 1988).

A major component of the Baldwin and Ford model that was not as prevalent in the Goldstein and Sorcher model is "trainee characteristics." This aspect deals with the trainee's *ability, personality, and motivation,* Figure 1. Goldstein and Sorcher (1974) referred to "observer characteristics" but only as a means to enhance trainee learning by aligning the traits of the observer with those of the model (person doing the modeling). Baldwin and Ford place greater emphasis on overall trainee characteristics, especially as they relate to before and after training. Trainee feedback, for example, is a good motivator during post-training interventions in increasing the motivation of the trainee to transfer skills (Baldwin & Ford, 1988). However, they concede, "The research on ability and personality characteristics has failed to identify those factors that are most critical in a training context" (p. 90). Similarly, Naquin and Baldwin (2003) contend that the reason so many dismal estimates of learning transfer exist (e.g., often as little as 10 %) is because individual characteristics, which may account for high transfer rates and the creation of pre-training conditions to help induce such dispositions, has generally not been actively managed.

At the heart of the model is the principle *generalizable rules* or *concepts.* This is somewhat similar to what has previously been described as "general principles" (Goldstein & Sorcher, 1974). However, a logical extension to the Baldwin and Ford model is the inclusion of the transfer outcomes of *generalization* and *maintenance,* Figure 1. Rather than mimicking behaviors as closely as possible to the way in which they are portrayed by the "model" Bandura (1977), as prescribed in training programs designed to teach motor skills, in the case of supervisory skills the objective is more to inculcate generalizable rules (specifying a class of behaviors to be used, given certain stimuli) and not simply to enable the trainee to reproduce only those behaviors specifically modeled. "Stated simply, the ultimate goal in complex skill-modeling training is to teach the trainee one or more principles (not strictly a list of behaviors) that will allow him/her to learn, generalize, and apply behaviors different from those modeled (Baldwin & Ford, 1988, p. 90).

Another very important aspect of the model, which is identified within the component *Work Environment,* under the major heading *Training Inputs,* is *support* and *opportunity to use,* Figure 1. Support can come from the trainee's immediate supervisor, peers, other participants in the training, or other members of the organization. However, support from the "boss" or supervisor is more likely to lead to successful transfer attempts (Gregoire, Propp, & Poetner, 1998; Brinkerhoff & Montesino, 1995; Rouiller & Goldstein, 1993; Tannenbaum & Yukl, 1992; Baldwin & Ford, 1988; Huczynski & Lewis, 1980). In relation to goal-setting for example, the supervisor can discuss the content and benefits of the program and set goals prior to (focus on improving skills) and subsequent to (action plans for applying skills) attendance in the program (Wexley &

Baldwin, 1986). Brinkerhoff and Montesino (1995) cite previous research that has found "...management support as being one of the most important factors in facilitating or hindering on-the-job application of skills learned in training programs" (p. 266).

The importance of work environment characteristics cannot be overstated. Huczynski and Lewis (1980) found that transfer attempts were more likely to be successful and beneficial when the supervisor sponsored "new ideas." Their research suggests that supported innovation attempts, especially those supported by the immediate supervisor, have a much higher chance of implementation success. Studies conducted by Tannenbaum and Lewis (1992) also indicate that supervisory support is a key environmental factor that can affect learning transfer. Brinkerhoff and Montesino (1995) relate that supervisors should be helped to better prepare their trainees and better support them after training. They exclaim the importance of a "partnership" between the training leader and the manager, to help supervisors better implement interventions that affect before-, during-, and after-training strategies for learning and using new skills that transfer to the job. Similarly, Broad and Newstrom (1992) also propose a "Transfer Partnership" where managers, trainers, and trainees come together to develop strategies that can be used to support eventual transfer. Another critical issue, which they point out, is that training in relation to learning transfer should be geared to addressing key business needs. Otherwise, there may not be any value to the training and consequently, no learning transfer will occur.

Although there is ample evidence to strongly indicate that supervisor support is crucial to learning transfer, in two recent studies carried out in European banking organizations, regarding supervisory support as a major condition for enhancing learning

transfer, Van der Klink, Gielen, and Nauta (2001) reported little or no significant impact on trainee's post-intervention job performance. In one of the banking organizations they indicated that there were some effects but the proportion of the variance that could be explained was quite modest.

Baldwin and Ford (1988) found only seven studies that examined the influence of the work environment on learning transfer and none that attempted to change the work environment. However, they do argue that well-learned skills may not be maintained on the job due to lack of supervisory support. They also note "while research suggests that supervisory support is an important component affecting transfer, there is little attempt to understand the supervisory behaviors that lead to perceptions of support by trainees" (Baldwin & Ford, 1988, p. 85).

Lastly, the final major aspect of the Baldwin and Ford model centers on *generalization* and *maintenance* under the heading Conditions of Transfer, Figure 1. Generalization refers to the extent to which trained skills and behaviors are exhibited in the transfer setting. Maintenance concerns the length of time that trained skills and behaviors continue to be used on the job (Baldwin & Ford, 1988).

Laker (1990) developed a different perspective to generalization and maintenance called "Dual Dimensionality of Training Transfer." He refers to the "temporal dimension," which includes *transfer initiation* – the degree to which the trainee initiates or attempts to apply on the job the training received, and *transfer maintenance* – the degree to which the trainee persists in applying on the job the training received. The "generalizability dimension" includes *near transfer* – the extent to which the individual applies what was acquired in training to situations that mirror the ones in which s/he was

trained, and *far transfer* – the extent to which the trainee applies the training to situations that are novel or different from the ones in which s/he was trained.

Although Ford (1990) applauds Laker's efforts in highlighting the importance of a multidimensional view of training transfer, he claims the paper falls short of meeting its objective of increasing the clarity of the transfer construct. Ford relates, no attempt is made to discuss the interdependence of the components, or under what circumstances the components are or are not conceptually distinguishable. He contends, boundaries for the constructs must be defined and examples provided to clarify their meaning. Otherwise, "the conceptual and operational issues behind the transfer construct remain very murky" (Ford, 1990, p. 226).

Managing learning transfer systems – 2000. In the interest of providing a more "intervention-oriented" approach to how organizational systems can be changed to enhance learning transfer, Holton and Baldwin (2000) developed "The Conceptual Framework for Managing Learning Transfer Systems," Figure 3.

One of the reasons that lead to the conceptual framework design was the lack of available resources to turn to for action-oriented strategies. Holton and Baldwin (2000) identified Broad and Newstrom's (1992) Transfer of Training book, as the only resource available at the time, regarding action-oriented strategies for enhancing learning transfer within organizational systems. Additionally, they found previous conceptual frameworks to have been largely descriptive, and so they adapted existing frameworks to fit a more intervention-oriented approach. Their model is consistent with other existing models such as, (Baldwin & Ford, 1988) and has been expanded to incorporate a temporal dimension like Broad and Newstrom (1992).

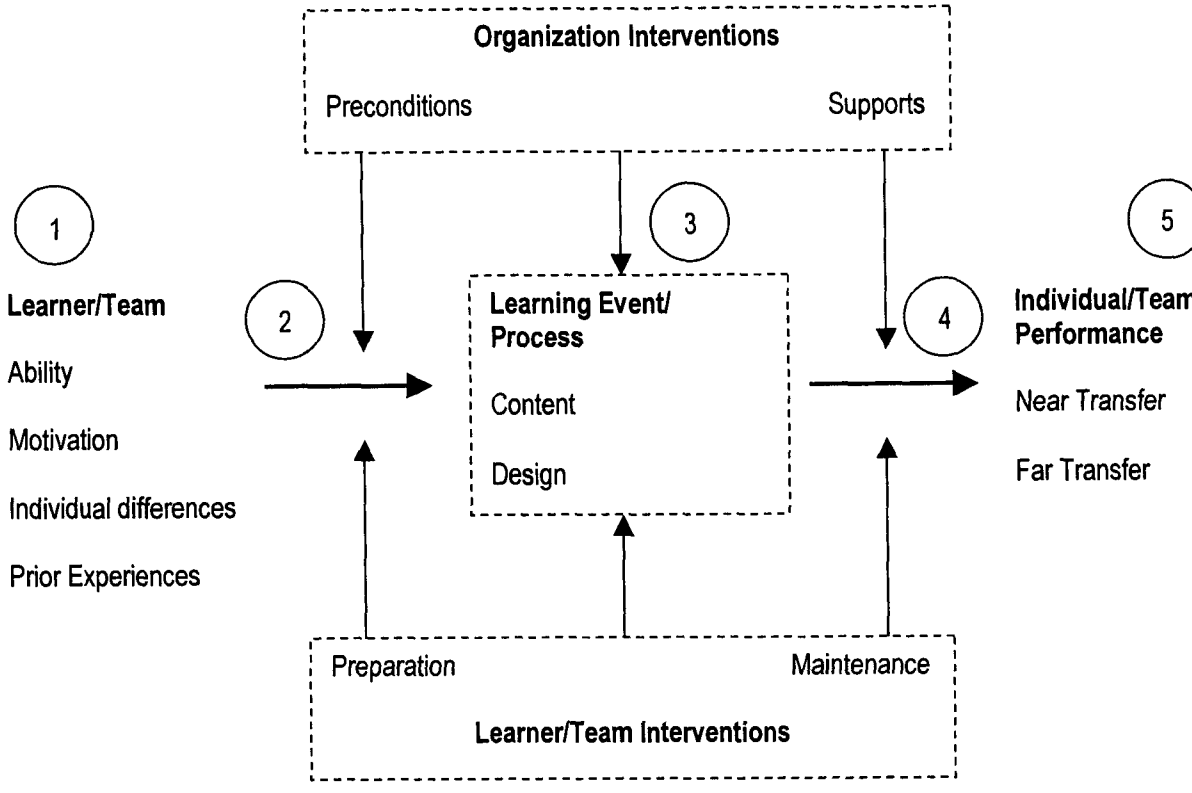

Figure 3. The Holton and Baldwin (2000) Conceptual Framework for Managing Learning Transfer Systems.

Holton and Baldwin (2000) have also numerically sequenced events (1 through 5) to indicate at which points in time the learner can be both an input to the process (time 1 in the figure) as well as a unit in the model that may be shaped by interventions. This key factor of the model distinguishes it from earlier versions. Time points 2, 3, and 4 are analogous to Broad and Newstrom's (1992) "before, during, and after" stages respectively. A fundamental aspect of the model is that at points 2 and 4 the two major intervention sets, *Learner-Team Interventions* and *Organization Interventions*, influence the process. The Organization Interventions component, located above the *Learning Event/Process* include both *preconditions* and *supports*, while Learner/Team Interventions, located beneath the Learning Event/Process include *preparation* and

maintenance. Both sets have before and after components, which on some occasions might also influence the learning event itself.

The learning event, time point 3, is composed of two dimensions: *content* and *design*. Holton and Baldwin emphasize that the learning event must be built around content that is viewed as valid and complete to attain job performance outcomes. A relative statement to this effect was made by (Broad & Newstrom, 1992), (page 40 of this paper). Furthermore, "the content must be taught in a manner that enables learners to use it in real work situations, which is called transfer design" (Holton and Baldwin, 2000, p. 4).

The fifth time point of the model represents performance outcomes from learning and has two dimensions of performance outcomes: *near transfer* (short term results) and *far transfer* (longer-term transfer and generalization of learning to new situations). According to Holton and Baldwin (2000) performance outcomes from learning must provide an appropriate balance between near and far transfer. Collectively, the elements of the conceptual framework model comprise what Holton and Baldwin call the *learning transfer system.*

The Contextual Problem Solving Training Model

The Contextual Problem Solving Training Model is the foundation, upon which learning transfer will be facilitated during this research, to determine to what extent transfer in manager-leaders has occurred. The learning transfer model is a hybrid developed by the researcher and is based on previously identified models (Goldstein & Sorcher, 1974; Baldwin & Ford, 1988; Holton and Baldwin, 2000), and various other training design methodologies (Kreitner & Luthans, 2001; Kirkpatrick, 1998; Broad &

Newstrom, 1992; Robertson, 1989; Parry & Reich, 1984; Kelly, 1982). The learning transfer model is conjointly designed within the Contextual Problem Solving Training Model (see Figure 4).

This model is an appropriate construct for changing behavior because it is designed to affect human behavior in accordance with the principles of social learning theory and performance outcomes. The behaviors identified for change (see Guide for Researcher's Observations of Target Behaviors, Appendix A) are the target behaviors that will be impacted. However, the "strength of the ink" between learning transfer and performance outcomes is rooted in part, in the perception of each participant who has volunteered for this research that the training is crucial to his/her job performance and will at some point result in some kind of reward (i.e., intrinsic or extrinsic).

The basis for this approach, described by Burke and Baldwin (1999) touches upon a very critical aspect of corporate training, mainly that the first stage of behavioral change requires the person to be "ready" to modify habitual patterns. Unlike participants in clinical settings, where recognition on the part of the trainee that transfer of the trained skills is central to his/her health and well-being, in the corporate setting, participants are often overwhelmed by work pressures and project timelines. These pressures infect the learning environment and as a consequence trainees do not achieve the necessary readiness required to reinforce relapse prevention.

To ameliorate the negative impact of such consequences for this research, involving the participants' supervisors and gaining their support to facilitate the training created a more supportive transfer environment.

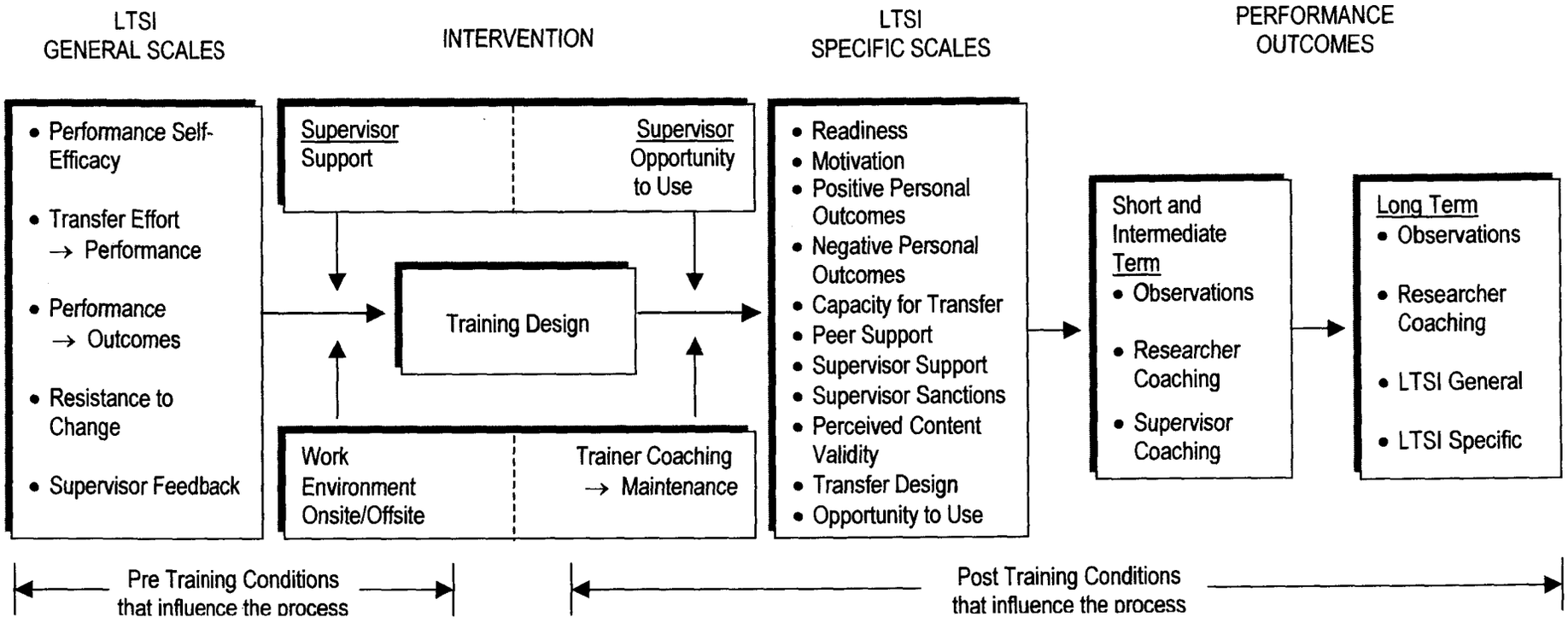

Figure 4. Schematic diagram of the Contextual Problem Solving Training Model and how trainee characteristics and the work environment affect learning transfer.

The following discussion will explain the various components of the Contextual Problem Solving Training Model and their related interactions.

Intervention

The Intervention part of the model consists of the following three components:

First component. Training design. Problem solving is central to effective management. Managers are hired and retained primarily for their ability to solve problems (Jonassen, 2003). A successful problem solver critically analyzes pertinent information, and then develops suitable alternatives from which a likely solution may be implemented.

At the center of the model is the Training Design, which is based on Contextual Problem Solving, Figure 4. The training focuses on three requirements central to becoming an effective problem solver: 1) Knowledge – understanding of contextual problem solving, 2) Skill – ability to analyze information and develop suitable alternatives, and 3) Practice – experience and expertise in arriving at workable solutions.

Like many other disciplines, problem solving requires knowledge and skill. Accomplished manager-leaders know how to transfer acquired problem solving skills to novel problems in different contexts (contextual problem solving). Many, however, although well instructed in their respective fields have never received formal training in problem solving. Consequently, they have no prescribed process for handling situations, matters, or personnel that present perplexity or difficulty. Inability to approach complex or difficult situations in a systematic manner may cause confusion and frustration and can often lead to inadequate solutions, or avoidance of problem solving altogether.

The training design encompasses aspects of problem solving by (Jonassen, 2003; Renkel, Atkinson, Maier, & Staley, 2002; Chafee, 1999; Loehle, 1998; Wood, 1983; Gick and Holyoak, 1980), as well as the *Analysis model* and the *Qualification model,* developed by the researcher.

Second component. Supervisor support and opportunity to use. As it has already been established, supervisor support and opportunity to use what has been learned during the training is absolutely essential for learning transfer to occur. The primary role of the supervisor will be to motivate and support the participants, and also to provide an opportunity to use the newly acquired skills on the job.

Third component. Work environment and trainer coaching. The literature is replete with research that supports the use of identical elements, which presumes a greater probability of transfer when a higher percentage of characteristics (identical elements) exists both in the training and application settings (Thorndike & Woodworth, 1901). Therefore, to maximize learning transfer, the intervention will be conducted *onsite* (the environment in which the participants conduct their daily work activities), Figure 4.

Trainer coaching will be provided, in order to promote ongoing interest and immediate feedback, and to strengthen what has been learned during the training. This aspect of the model dovetails with Opportunity to Use Learning and is an enhancement of maintenance of behavior, which concerns the length of time that trained skills and behaviors continue to be used on the job (Baldwin & Ford, 1988).

Coaching is vital to productivity. In a study conducted by Olivero, Bane, and Kopelman (1997) the researchers found that when training was augmented by coaching, there was considerable increase in trainee productivity. In their conclusion, they reported

that the research demonstrated dramatic effects of one-on-one executive coaching as a transfer of training tool.

LTSI: Specific and General Scales

The Learning Transfer System Inventory (LTSI) (Holton, 2000) is a diagnostic instrument that offers a simple and quick approach to pinpoint learning transfer system problems (see Figure 4). Practitioners can use the LTSI in a number of ways:

- To assess potential transfer factor problems prior to conducting major learning interventions
- To follow up on evaluations of existing training programs
- To investigate known transfer problems
- To incorporate evaluation of transfer as part of regular employee assessments
- To conduct needs assessment for training programs and to provide transfer skills to supervisors and trainers

For the purpose of this research, the LTSI will be used to evaluate the participants' general perceptions regarding prior training programs, as well as their perceptions about the Contextual Problem Solving Training. The items on the LTSI instrument are divided into sections representing two construct domains, specific and general, which represent factors that affect the training program attended.

First Construct – Specific. This section is program specific because transfer system factors vary depending on the training program. For example, it is possible for a technical training program but not an interpersonal skills program to have strong transfer.

Second Construct – General. This section represents general factors that may influence any training program. Here, trainees are instructed to think about training in general terms in relation to their organization.

The LTSI General Scales is placed left of the Intervention (pre-training) and the LTSI Specific Scales is placed right of the Intervention (post-training) (see Figure 4).

Pre-Intervention Trainee Factors

Within the pre-intervention trainee factors (LTSI General Scales), two so far have not been commented on – *performance self-efficacy* and *resistance to change*. The first, performance self-efficacy, defined as the individuals' general belief that they are able to change their performance when they want (Holton, 2000) is important in regard to how confident a trainee feels about his/her ability to use newly acquired skills on the job. Perceived self-efficacy, concern with judgments of personal capability, should not be confused with self-esteem, concern with judgments of self-worth (Bandura, 1997). According to Bandura (1997) "There is no fixed relationship between beliefs about one's capabilities and whether one likes or dislikes oneself" (p. 11).

Self-efficacy may be used as a formal objective of the training i.e., to ensure performance accomplishments, in order to enhance self-efficacy, or alternatively, enhanced self-efficacy may be an unintended outcome of other, well-designed training programs (Kraiger, Ford, & Salas, 1993). The former presumes that self-efficacy can be included as a post-training measure of learning that can affect the relationship between knowledge acquisition and subsequent performance. According to Marx (1982) post-training self-efficacy beliefs may be useful predictors of long-term transfer or skill maintenance. However, from the point of this research, and the way Holton (2000)

intends self-efficacy in regard to the LTSI General Scales (pre-training), the trainees need to have high performance self-efficacy, or the general belief that they can use learning to change their performance.

The second factor is resistance to change, the extent to which prevailing group norms are perceived by individuals to resist or discourage the use of skills and knowledge acquired in training (Holton, 2000). This has to do with the degree to which people are open to changing the way they do things. Analysis indicates that when manager trainees work in units that have a more positive organizational transfer climate, they will relate as better performers of behaviors previously learned in training (Rouiller & Goldstein, 1993).

Comparison of LTSI Scores Amongst Other U.S. Organizations

In an effort to do a normative comparison of the research participants' LTSI scale scores (see Chapter 5), the researcher contacted the authors of the Learning Transfer System Inventory to inquire if any normative data had been recently published. In response, the authors indicated that no normative data per se existed, but a recently published paper compared LTSI scores across multiple public, private, and non-profit organizations.

Using a subset of 1,099 respondents, Holton, Chen, and Naquin (2003) compared transfer systems across three organization types, eight organizations, and nine types of training, in order to investigate how learning transfer systems differed across organizational settings in the United States. The reason for the study was to establish norms for transfer factors, by empirically examining the differences in transfer systems across different situations, with the intention of helping organizations become aware of

what parts of a transfer system needed improvement, so as to enhance transfer of learning. The study addressed the following research questions:

1. Are there significant differences in transfer system characteristics between organizational types (profit, nonprofit, and public sector)?
2. Are there significant differences in transfer system characteristics between specific organizations?
3. Are there significant differences in transfer system characteristics between different training types?

Holton, Chen, and Naquin's (2003) research design consisted of using a nonexperimental survey. The sample for the analysis was selected from the LTSI response database, which at the time had 4,562 responses from fifteen organizations in three countries. However, only U.S. organizations were selected because cross-cultural comparisons were beyond the scope of the study. The final sample consisted of 1,099 individuals employed by eight different U.S. organizations comprising four private sector organizations (three manufacturing, and one services firm), three public sector agencies (one federal and two state government), and one nonprofit organization.

Holton, Chen, and Naquin (2003) reported the following results:

Research Question 1 – Are there significant differences in transfer system characteristics between organizational types (profit, nonprofit, and public sector)? MANOVA analysis showed statistically significant differences on all criteria, indicating that transfer system characteristics differed across organizational types.

Results from the private sector showed that employees perceived that changing their performance (Performance Outcomes Expectations) was likely to lead to valued

outcomes, that they had more opportunity to use their learning (Opportunity to Use Learning), and that they had greater capacity for trying new learning (Personal Capacity for Transfer). Employees in the public sector perceived that their supervisor was more likely to oppose their use of new methods learned in training, that they were more likely to encounter resistance to change, and that they were more likely to have negative personal outcomes if they did not apply their training. The nonprofit sector appeared to have a particularly strong transfer system with higher motivation to transfer and more supervisor support.

Research Question 2 – Are there significant differences in transfer system characteristics between specific organizations? MANOVA analysis revealed statistically significant differences across organizations, indicating that the transfer systems were significantly different across the selected organizations.

Organization 8, which was a nonprofit organization, appeared to have a substantially different transfer system from the other organizations. In organization 8, the performance coaching scale was significantly higher than that of organizations 3 and 4. The Supervisor Support scale was significantly higher than that of organizations 1, 3, 4, 6, and 7. The Peer Support scale of organization 8 was significantly higher than that of organizations 2, 6 and 7. The Personal Positive Outcomes scale of this organization was significantly higher than that of organizations 1, 3, 4, 5, 6, and 7, and the Personal Negative Outcomes scale was significantly higher than organizations 1, 4, 5, 6, and 7. In summary, five of seven work environment – associated scales in organization 8 were significantly higher than at least two other organizations.

Research Question 3 – Are there significant differences in transfer system characteristics between different training types? MANOVA analysis indicated that the transfer systems are significantly different across training types.

Results indicated, first there were no differences in perceptions of perceived content validity across the training types. However, all training was rated with only moderate content validity (the mean score was approximately 3.4). According to Holton, Chen, and Naquin (2003) this suggested that all training examined in the study suffered from a disconnect between the job and training content. Supervisor support was also rated low across all training types, "confirming the widely held belief that supervisors do not generally support training as they should. The two personal outcomes scales were also low, confirming that organizations generally have not adequately linked training to performance outcomes" (p. 479).

In Table 1, Holton, Chen, and Naquin (2003) list organizational type means in *Univariate Comparisons by Organizational Types*. The public, private, and nonprofit organizations' scores have been rounded off to the nearest tenth of a decimal point, to maintain consistency when compared to those of the research participant scores (see Chapter 5).

Summary of the Holton, Chen, and Naquin (2003) Study

The Holton, Chen, and Naquin (2003) study documents that transfer systems are significantly different across organizational types, organizations, and training types. The variance demonstrated in the data suggests that each situation will present a unique collection factor – some strong and some weaker. "Thus the only principle being generalized from this study is that there is no generalization; each situation has to be

Table 1

Univariate Comparisons by Organizational Types, (Holton, Chen, and Naquin, 2003)

LTSI Scales	Public	Private	Non-profit
Training in General			
Transfer Effort – Performance Expectations	3.9	4.0	4.1
Performance – Outcomes Expectations	3.2	3.4	3.5
Resistance – Openness to Change	2.8	2.6	2.6
Performance Self-Efficacy	3.6	3.8	3.8
Feedback/Performance Coaching	3.0	3.1	3.3
Training Specific			
Learner Readiness	3.1	3.2	3.3
Motivation to Transfer	3.9	3.9	4.2
Personal Outcomes/Positive	2.3	2.4	3.0
Personal Outcomes/Negative	2.6	2.2	2.8
Personal Capacity for Transfer	3.2	3.3	3.1
Peer Support	3.4	3.4	3.6
Supervisor/Manager Support	3.0	2.8	3.4
Supervisor/Manager Sanctions	2.8	2.3	2.3
Perceived Content Validity	3.5	3.4	3.6
Transfer Design	3.9	4.0	4.2
Opportunity to Use Learning	3.5	3.7	3.5

examined individually" (Holton, Chen, & Naquin, 2003, p. 473). The "bottom line" according to Holton et al. is that not all organizations will or should build the same types of learning transfer systems, due to the cultural variations across organizations. After examining the Holton, Chen, and Naquin (2003) study, it becomes clear that the differences in scores are related to the differences in, not only the kind of organization (i.e., public versus private versus nonprofit), but also the type of culture existing within similar organizations. The following section compares these results (private sector only) with the pilot study LTSI results.

Comparison of LTSI Pilot Study and Holton, Chen, and Naquin (2003) Study

There were twelve mid-to-upper level managers in the private sector organization that participated in the pilot study. Table 2 compares the pilot study scale scores with those of the Holton, Chen, and Naquin (HCN) (2003) study scale scores.

Table 2

Summary of Pilot Study and Holton, Chen, and Naquin (2003) Study General and Specific Scale Scores

LTSI Scales	Pilot Study Private Sect. Scale Scores	HCN Study Private Sect. Scale Scores
Training in General Scales		
Transfer Effort – Perf. Expectations	3.9	4.0
Performance – Outcomes Expectations	3.5	3.4
Resistance – Openness to Change	3.3	2.6
Performance Self-Efficacy	4.0	3.8
Feedback/Performance Coaching	3.1	3.1
Specific Training Program Scales		
Learner Readiness	3.3	3.2
Motivation to Transfer	3.7	3.9
Personal Outcomes/Positive	3.1	2.4
Personal Outcomes/Negative	2.3	2.2
Personal Capacity for Transfer	2.9	3.3
Peer Support	3.1	3.4
Supervisor/Manager Support	2.8	2.8
Supervisor/Manager Sanctions	2.1**	2.3**
Perceived Content Validity	3.3	3.4
Transfer Design	3.8	4.0
Opportunity to Use	3.1	3.7

Note. ** Negative scale item. High scale score on this scale would indicate that supervisors are actively opposing that transfer of learning.

For the Training in General Scales, all scores except Resistance – Openness to Change, were similar (see Table 2). There was a large difference, however, between the pilot study company and the private sector "norms" on the HCN study Resistance –

Openness to Change scores (3.3 versus 2.6), which suggests that the pilot study respondents perceived that individuals in their group were more open to "changing the way they do things," hence offering less resistance to those who wanted to apply skills and knowledge acquired in training, to the job.

For the Specific Program Training Scales, there were large differences in favor of the pilot company in Personal Outcomes/Positive (3.1 versus 2.4), which suggests that training for the pilot company is more likely to lead to positive outcomes. On the other hand, the HCN private sector companies were higher on Personal Capacity to Transfer (3.3 versus 2.9), Peer Support (3.4 versus 3.1), and Opportunity to use Learning (3.7 versus 3.1). These findings suggest that there is less capacity for transfer, less peer support, and less opportunity in the pilot test company to obtain resources that will enable them to use training on the job.

Once again, as Holton et al. previously pointed out, the type of culture existing within similar organizations has a significant role in determining training outcome effects.

Performance Outcomes

In the present study, three performance outcomes will be measured – *short, intermediate,* and *long term.* Often times, short and long term performance outcomes are associated with near and far transfer (Laker, 1990). Near transfer is the extent to which the individual applies what was acquired in training to situations that mirror the ones in which s/he was trained, and far transfer is the extent to which the trainee applies the training to situations that are novel or different from the ones in which s/he was trained (Laker, 1990).

However, for the purpose of this research, short-term performance outcomes will refer to the first seven days following the intervention/training, during which time post-intervention observations will be conducted. Intermediate performance outcomes will refer to the thirty-day follow-up period, at which time, post-intervention observations will be conducted and researcher coaching will be given, as indicated in the Schematic Diagram of the Design and Procedure for the Multiple Baseline Across Subjects Design. Long term performance outcomes will refer to the sixty-day follow-up period, at which time, post-intervention observations will be conducted, researcher coaching will be given, and the LTSI General and Specific questionnaire will be administered.

In summary, the Contextual Problem Solving Training Model is an amalgam of prior learning transfer models and systems. It is designed to meet the requirements this researcher feels are necessary to develop an alternative learning transfer process, in order to assist trainees to successfully transfer learned knowledge and skills to the job. The model, originally based on the works of Goldstein and Sorcher (1974), has been modified to conform in design to more recent models developed by Baldwin & Ford (1988) and Holton and Baldwin (2000). Also, it has been adapted to split the LTSI Scales into pre-intervention general scales and post-intervention specific scales. Performance outcomes will be measured as short, intermediate, and long term, rather than near and far transfer outcomes. This is done, in order to maintain a manageable number of variables and also because near and far transfer focuses on training design characteristics that affect generalizability of training (Ford, 1990), which is not a crucial concern of this research.

Relapse Prevention

Baldwin and Ford (1988) and Tannenbaum and Yukl (1992) identify learning transfer to be widely acknowledged as the chief concern of organizational training initiatives. Throughout this literature review some of the most significant aspects of learning transfer have been identified and discussed. The discussion will now focus on an element of transfer that was not as prevalent during earlier research – relapse prevention (RP) (Marx, 1982).

RP was originally developed for individuals who were undergoing treatment for addictive behaviors such as alcohol and drug use, smoking cessation, and weight loss (Burke and Baldwin, 1999). But it was also found to have powerful implications for the maintenance of managerial training. Marx (1982) states, "Managers are spared the physiological component of behavior change present in addiction problems, but they must negotiate an analogous array of disruptive psychological and environmental influences in order successfully to maintain long term behavior change" (p. 433).

The underlying premise of RP is that a manager who has undergone for example, leadership training, in which s/he has been exposed to a variety of leadership behaviors, and who is successfully applying the learned skills on the job, may due to unexpected work pressures, experience a temporary relapse and revert to his/her old ways. The manager may attribute the relapse as a total failure due to personal inadequacy rather than a temporary lapse attributed to lack of skills and consequently return to his/her old management style in the belief that *it* has greater effectiveness. However, an RP trained manager understands the importance of the response to an initial slip and expects crises and temporary failures in implementing new skills. The critical difference for the

manager untrained in RP is vulnerability to the problematic effects of unplanned events (Marx, 1982). Table 3 describes the Comparative Responses of Managers Trained and Untrained in Relapse Prevention (Marx, 1982, p. 436).

Table 3

Managers Trained and Untrained in Relapse Prevention (Marx, 1982)

Manager who is trained in RP	Manager who is untrained in RP
1. Monitors high-risk situations – trained to expect a variety of high-risk situations that are likely to interfere temporarily with new learning. Has probably identified time pressure as a likely possibility.	Fails to monitor high-risk situations – high-risk situation arises "unexpectedly." No preparation for dealing with it.
2. Coping response – manager trained in a variety of coping behaviors with high risk situations or knows where to obtain help. Time management, contingency planning.	Lack of specific coping skills. Reliance on willpower or avoidance strategies. Perceives temporary lapse as failure.
3. Increased self-efficacy – manager trained to experience a sense of accomplishment at attempting to use new coping skills under pressure.	Decreased self-efficacy – manager feels a lack of control and attributes failure to own inabilities.
4. Decreased probability of relapse – manager continues to perceive difficulties in managerial behavior as skill deficits and seeks training whenever environmental circumstances threaten to sabotage positive outcomes.	Increased probability of relapse. Abstinence violation effect – manager experiences dissonance for having failed to implement new training. Attributes greater effectiveness to old behaviors. Decreased probability of experimenting with new skills.

In summary, relapse prevention is particularly applicable as a post-training transfer strategy. The relapse prevention model consists of both cognitive and behavioral components to facilitate the long-term maintenance of learned behaviors by teaching

individuals to understand and cope with the problem of relapse. Table 4 describes the Functions of Relapse Prevention for Management Training (Marx, 1982).

Table 4

Functions of Relapse Prevention for Management (Marx, 1982)

Strategy	Purpose
1. Awareness of the relapse process	Helps manager to understand how self-control strategies can enhance maintenance
2. Identification of high risk situations	Heightens manager's sensitivity to specific situations that have previously resulted in difficulty
3. Developing coping responses	Enables manager to learn appropriate skills to overcome environmental hurdles
4. Enhancing self-efficacy	Assists manager in maintaining personal worth, despite imperfect performance
5. Expectancies of the effects of the activity	Counters manager's short term positive expectations of the ineffective behavior
6. Abstinence violation effect	Helps manager to reduce guilt and avoid self-blame for having failed to implement a newly trained behavior
7. Apparently irrelevant decisions	Strengthens awareness of seemingly minor decisions that culminate in a slip or relapse
8. Should/want ratio	Helps manager to maintain a balance of personal satisfaction in daily activities
9. Life style interventions	Proposes physical and emotional coping skills to buffer manager from stress-induced relapse
10. Programmed relapse	Provides manager with monitored failure experiences that can be analyzed to avoid future relapse

The Future of Learning Transfer

The research to date, about learning transfer has been far-reaching and continues to expand on the original models and concepts developed during the 70's and the preceding theories and principles that had influenced much of what had occurred during that period and beyond. While the final chapter on learning transfer has yet to be written, it has become quite evident that adherence and dedication to learning and transfer ideals can significantly affect positive performance outcomes between training and transfer.

Although the traditional face-to-face, classroom style instruction, has been the most popular and effective method of teaching and facilitating training initiatives, recent technological advancements have changed the way training and performance support can be provided. Eddy and Tannenbaum (2003) for instance, relate how technology allows training and other developmental resources to be distributed at a distance. They point to e-learning as an effective and efficient way to access training whenever it is needed. Moreover, they talk about one of the great benefits of e-learning in that it appears to eliminate the gap between learning and application, meaning users have direct access to the information they need, when they need it. This is very important because it minimizes certain transfer concerns that otherwise, might affect traditional learning and transfer outcomes.

Eddy and Tannenbaum's primary goal is to identify ways to maximize transfer through the use of e-learning initiatives. Specifically, they attempt to identify some of the most common obstacles to learning transfer. They use knowledge from the training literature to examine the impact of transfer obstacles in e-learning, and explore how various e-learning initiatives might mitigate them. They begin by defining transfer "as the

degree to which employees use newly acquired knowledge and skills to perform their job effectively and enhance organizational effectiveness" (Eddy & Tannenbaum, 2003, in press). This definition is not all that different from the aforementioned learning transfer definitions except that it includes the organization as part of the enhancement process, instead of just the individual. They then go on to identify some of the more common factors that can inhibit transfer, such as characteristics of the learning event, attributes of the learner, motivational factors, and characteristics of the work environment. Finally, they arrive at initiatives that maximize transfer.

The good news – areas where initiative naturally mitigates transfer concerns (Eddy & Tannenbaum, 2003), is that online training and education provides flexibility of when and how to participate. This flexibility can lead to an increase in motivation, enhancing the chance that participants will engage in learning and apply what is learned on the job. Additionally, well-designed online training can be structured to ensure appropriate practice conditions and feedback and the learning can occur on the job, at the employee's workstation. An employee can choose to participate in the learning event just prior to needing the new knowledge or skill, rather than attending a training class weeks or even months before the new skill can be applied on the job. Eddy and Tannenbaum claim that with little or no lag between learning and application, skill decay declines and the chance of transfer is increased.

Eddy and Tannenbaum also address a number of critical obstacles. For example, not all online training incorporates effective "trainer" strategies, which can diminish chances for transfer. But, providing trainer facilitated e-learning rather than a simple self-paced opportunity can compensate for this. Regarding learner attributes, employees with

low need for achievement may not be motivated to engage in the learning because they may not feel confident in their ability to successfully complete an online training course. Moreover, factors beyond the learners' control that can contribute to low self-efficacy and lack of confidence include a weak continuous learning culture, situational constraints, and lack of support from coworkers and supervisors.

To overcome these obstacles and maximize transfer in online learning and education, Eddy and Tannenbaum recommend the following: 1) build training that is both relevant and similar to the job, 2) promote the instrumentality/value of the learning, 3) be selective about the required courses (label important courses as such, but do not overuse this label), 4) prepare "computer phobics" (employees uncomfortable about their ability to use computers), 5) develop the opportunity for practice and feedback, 6) build in action planning and other follow up devices, and 7) evaluate transfer/usage.

In summary, there are benefits to using e-learning for the purpose of transferring knowledge and skills to the job, especially for individuals who enjoy learning through technological means. Although e-learning is probably not, at this time, suited for everyone, it has several advantages over traditional learning practices. It is an effective and efficient way to access training whenever it is needed. It is flexible and can lead to an increase in motivation, enhancing the chance that participants will engage in learning and apply what is learned to the job, and it appears to eliminate the gap between learning and application. The primary emphasis on e-learning is its unique approach to maximizing transfer in ways traditional learning cannot. The research on e-learning on maximizing transfer is relatively new and although promising, it may be a while before it "stems the tide" from the traditional approach.

Summary

Identical elements, general principles, stimulus variability, and conditions of practice are components of the Training Design (Baldwin & Ford 1988), and essentially, constitute basic requirements for the transfer process. As previously stated, Goldstein and Sorcher (1974) described identical elements, general principles, response availability, and performance feedback, as means to maximize learning transfer. Also, included in their learning transfer process were modeling, role-playing, and social reinforcement, aspects of applied learning that sought to overcome the serious weaknesses characteristic of most training programs of the time (Goldstein & Sorcher, 1974). The aforementioned weaknesses pertain primarily to training processes, which usually assess learning but not behavioral changes related to on-the-job application (learning transfer).

The applied learning system is predicated on using *organizational behavior management* Kreitner and Luthans (2001) techniques to induce positive results in participants. Goldstein and Sorcher (1974) describe how in 1972, seventy-four student nurses at a moderately sized hospital were trained using applied learning to raise their level of empathy characterizing their typical daily interactions with patients.

The principles of learning transfer used in this study are classified under the heading Training Design, Schematic Diagram of the Contextual Problem Solving Training Model, Figure 4.

Before learning transfer can occur learning must first take place. However, even after learning has occurred it is not a guarantee that the knowledge and skills acquired during training will transfer to the work environment. As indicated by Baldwin and Ford (1988) "...well-learned skills may not be maintained on the job due to lack of motivation

or lack of supervisory support" (p. 65). A cogent learning transfer program should reveal a rigorous examination of supervisory sponsorship and future commitment, to insure that barriers to transfer are minimized. This means that supervisors involved in sponsoring this type of training process must be prepared to actively support and encourage managers to employ what they have learned, and to prevent barriers that may cause failure of transfer. Gregoire, Propp, and Poetner (1998) state:

> Motivation is a critical interactive component affecting attitudes of trainees in all three aspects of the transfer process – pre-training environment, training environment, and post-training environment. If motivation is lost at any level of the training environment, it is unlikely that transfer will occur (p. 3).

Additionally, one of the greatest barriers to transfer is poor planning on the part of the supervisor and manager in terms of how the skills will be applied to the job (Kirkpatrick, 1998). Manager-leaders participating in a learning transfer process must know that what they learn, not only has relevance to their work setting, but is also part of a follow-up plan to incorporate the new skills into the job. Trainee motivation must be considered and elevated prior to any training taking place.

In conclusion, the Contextual Problem Solving Training Model will be the means through which the intervention variable should positively impact the learning transfer variable. Low motivation and low support, and lack of opportunity to use learning can negatively impact learning transfer. Therefore, trainee motivation should increase when ample supervisor support and opportunity to use learning are presented.

CHAPTER 3: METHOD

Research Rationale and Approach

Rationale

This is a quantitative research project that used a quasi-experimental, multiple baseline across subjects design, to ascertain to what extent knowledge and skills acquired by manager-leaders during a leadership skills development program in *Contextual Problem Solving*, had been successfully transferred to the job environment. The definition of successful transfer was based on a model of the transfer process by Baldwin and Ford (1988), which states "For transfer to have occurred, learned behavior must be generalized to the job context and maintained over a period of time on the job" (p. 63).

Research Validity

There are several factors that affected the internal validity of this study. First, after the selected research participants underwent initial baseline observations, and the baselines began stabilizing for all participants, the order in which each participant received the treatment was random. This enhanced internal validity. Second, experimental and control groups were not used. The participants served as their own controls; therefore, equivalence of groups on participant characteristics were fine.

The third factor that impacted this study involved threats related to extraneous experience and environment variables. It was not likely that maturation would have posed a threat to internal validity, especially physical maturation, because the participants were

involved in the research for only 60 days. Moreover, all participants were adults. Also, the intervention was not related to any health or medical treatment, therefore there was little threat to the dependent variable. Regarding the threat of history, a multiple baseline across subjects design was used which eliminated the internal validity threat of history (Gliner & Morgan, 2000).

Potential participants were initially informed by their immediate supervisor of the study, after which time the researcher delivered further details of their potential involvement during one of their weekly staff meetings, at their place of employment. Participants were not randomly selected because they volunteered for the study, thus the sample may well not have been representative of the theoretical population, and external population validity was probably medium to low. Additionally, only one specific company (mortgage lender) was used in the research.

However, several factors supported high ecological external validity. First, this study was field research and not subject to laboratory procedures that lower external ecological validity. It was conducted at the participants' place of employment and under normal work conditions. Second, two data collection methods (a transfer questionnaire and an observation guide of target behaviors) were used to enhance credibility of results. Third, procedures regarding the intervention closely resembled the participants' normal training conditions and environment. Fourth, the intervention period was short and non-intrusive. Fifth, this researcher conducted all aspects of the research and intervention. This researcher has extensive experience in the field in which the study took place and in the type of intervention the participants underwent.

Research Approach

This multiple baseline across subjects design study was about the behavior of single individuals. The design was chosen because of its usefulness in research involving social learning theories and human behavior. Social learning theory is the basis upon which (Burke & Baldwin, 1999; Broad & Newstrom, 1992; Baldwin & Ford, 1988; Latham & Saari, 1979; Goldstein & Sorcher, 1974) have constructed their learning transfer models and processes. Latham advocates the use of multiple baseline designs to assess training effectiveness (cited in Tannenbaum & Yukl, 1992). The actual learning transfer involved using elements of learning transfer models developed by Goldstein and Sorcher (1974), Baldwin and Ford (1988), and Holton and Baldwin (2000).

Participants

Population

Generalization to the target or theoretical population for this study was limited due to the constraints of the sampling procedures. Ideally, the theoretical population is all mid-level manager-leaders working in for-profit companies in the United States. However, because the researcher limited this study to a single organization that was not randomly selected (convenience sample), generalizability to other organizations and programs was limited.

Sampling Procedures

As previously stated in the *Limitations* section of Chapter 1, the success of this research hinged on the participation of human subjects, specifically corporate mid-level managers. However, soliciting participation from such individuals was quite difficult. Organizational executives were reluctant to extend the efforts of their personnel to

ancillary activities, such as participation in experimental research projects that diverted them from their primary responsibilities. Consequently, this researcher had limited resources available for sampling. Therefore, a non-probability sampling technique was used, specifically, convenience sampling.

To conduct this study, this researcher obtained approval from the first vice president of a large mid-west home loans mortgage company, to allow mid-level managers within his department to voluntarily participate in the study. Four individuals, who met the research criteria, were asked to volunteer to participate.

This particular organization and its members were selected for this study for the following reasons: First, an initial needs analysis identified a deficiency in the company's overall training procedures that inhibited learning transfer. Second, further analysis revealed a gap in a particular leadership competency related to the mid-level managers in the Home Loans Division. Third, the manager-leaders in this study represented typical mid-level managers in corporate America. Fourth, there were approximately fifteen mid-level available managers under the direction of the first vice president, from which an acceptable number of (4) volunteers were solicited to participate in the study.

The reason only four volunteers were asked to participate was due to the constraints of the design methodology. In most common Multiple Baseline Across Subjects Designs, only three or four participants are required to carry out the procedure. The popularity of this design is partially as a result of the ease of completing this type of study (Gliner & Morgan, 2000). Although it is quite possible to use more than four participants, for this study it was not practical. To do so would not allow an adequate time frame to observe participants in their work environment. Since it takes

approximately one to one and half hours to observe each participant, and since the average workday is about eight to ten hours, depending on the individual, there would not have been enough time to conduct proper observations if more than four individuals were used. This of course, is compounded by the fact that participant availability was not always under the control of this researcher. As it turned out, one of the volunteers dropped out of the study during the baseline observation period, and could not be replaced.

Overall, the manager-leaders' contributions to this study provided valuable information regarding assessment of the intervention; as well as overall effects of learning transfer outcomes.

Measures

The instruments used to assess the dependent variable were comprised of researcher observations and a questionnaire, which are explained below under the heading *Dependent Variable.* The instruments were incorporated into the Contextual Problem Solving Training Model, Figure 4, developed by the researcher.

Variables

There was one active independent variable (the training) with three aspects, several attribute independent variables (such as motivation assessed by the Learning Transfer System Inventory), and one dependent variable (Learning Transfer), with several aspects.

Active Independent Variable or Intervention

First aspect – Initial training. This aspect of the independent variable is the *intervention* that affects the outcome, or dependent variable *learning transfer*. It consists of instructing participants in the application of *Contextual Problem Solving* by employing the following aspects of transfer design:

- *Identical Elements*

  Research indicates that the greater the number of identical elements or characteristics in the training and application settings, the greater the consequent transfer (Baldwin & Ford, 1988; Goldstein & Ford, 2002; Laker, 1990; Leifer & Newstrom; 1980, Goldstein & Sorcher, 1974). Efforts to maximize identical elements consist of conducting the training at the participants' place of employment and using criteria within the training that apply to actual work situations and problems.

- *General Principles*

  The concept of general principles is based on providing trainees with general rules and theoretical principles, so that what is learned may not only be satisfactorily demonstrated during the training, but also applied contextually on the job (Baldwin & Ford, 1988; Goldstein & Ford, 2002; Laker, 1990; Leifer & Newstrom, 1980; Goldstein & Sorcher, 1974).

- *Response Availability*

  Response availability refers to the nature, in which individuals' past responses or behaviors are more likely to occur on subsequent occasions Goldstein and Sorcher (1974). They state, "This principle derives in part from research on

overlearning, which demonstrates that the higher the degree of original learning, the greater the probable level of subsequent transfer" (p. 58). They caution, however, that criteria that indicate how much learning is "overlearning" (Goldstein, 2002), are hard to come by and that *negative* transfer (response interference rather than facilitation) may occur, if training on a second skill begins while the first skill is still only partially learned.

To reduce the risk of a negative or no transfer occurrence in this study, the researcher limited the number of skills being taught, to one.

- *Performance Feedback*

Goldstein and Sorcher (1974) describe performance feedback as the "primary reinforcement that will decide what happens at the work site, that determines whether the learning acquired finds enduring expression in successful work performance (p. 58). Velsor and Guthrie (1998) relate that engaging in a feedback-intensive program is a good way to boost self-confidence and build self-awareness, both of which motivate people to want to develop new learning skills. "People's motivation to increase their productivity on a task increases *only* when they have a challenging goal *and* receive feedback on their progress" (Kouzes & Posner, 2002, p. 319).

To maximize successful learning transfer, this researcher coached the participants' supervisor to provide systematic support both before and after the intervention (see Figure 4, Schematic diagram of the Contextual Problem Solving Training Model) and to give appropriate feedback and reinforcement.

In addition, the researcher provided further on-the-job training or corrective feedback for below criterion work performance.

Contextual Problem Solving is part of the Training Design. It is central to effective management because managers are hired and retained primarily for their ability to solve problems (Jonassen, 2003). A successful problem solver critically analyzes pertinent information, and then develops suitable alternatives before arriving at a solution. The content goal of the Contextual Problem Solving Training Model is to organize and display problems to participants in ways that enhance their mental representations and engage appropriate problem solving processes, in order to increase their performance levels and fulfill their career goals.

The Contextual Problem Solving Training Model encompasses aspects of problem solving by (Jonassen, 2003; Renkel, Atkinson, Maier, & Staley, 2002; Chafee, 1999; Loehle, 1998; Wood, 1983; Gick and Holyoak, 1980), as well as the *Analysis model* and the *Qualification model,* developed by the researcher.

The inability to approach complex or difficult situations in a systematic manner may cause confusion and frustration and can often lead to inadequate solutions, or avoidance of the problem altogether. The Analysis Model is designed to enhance the user's skill sets and efficiencies necessary to perform strategic analysis and problem solving. It helps the user to identify the root cause(s) of a problem and then to systematically interpret, analyze, evaluate, and predict possible alternatives before arbitrarily arriving at a solution. The same model can be leveraged to safeguard against potential problems before they arise, hence influencing uninterrupted productivity,

activity and organizational goals and thus, maximizing human skill sets and overall growth.

The Analysis model is divided into two major sections (Problem Definition and Solution). Although these sections are interdependent, they can also be mutually exclusive when arriving at workable solutions. Another critical aspect contained in the model is the *Analysis Methods* section, a set of seven techniques for engaging in problem solving. A portion of the Guide for Researcher's Observations of Target Behaviors, Appendix A, is ordered around these techniques, which include *Backtrack/Forward Track, Simulation, Matrix, Design, Prototype, Analogical,* and *Pattern.*

The Qualification Model is designed to help the user identify and classify an important problem within an organization, ranging from a *Significant Level One* event that focuses on a "bottle neck" or less serious problem (usually confined to a single unit or department), all the way up to an *Urgent Level Two* event, which is "critical" and can affect the entire organization. The model identifies possible negative outcomes that may result from the problem (i.e., financial losses, layoffs, loss of customers, etc.), the problem solvers (individuals who most likely will be involved in handling and solving the problem), procedures intended to correct the problem, and the *problem-cycle time*, which is a ratio of the extent or magnitude of the problem and the time required to solve it.

The three elements central to contextual problem solving that were emphasized during the training consisted of the following:

1. Knowledge – Understanding of contextual problem solving
2. Skill – Ability to analyze information and develop suitable alternatives

3. Practice – Experience and expertise in arriving at workable solutions

Second aspect – Follow-up training or researcher coaching. This aspect of the independent variable occurred after completion of the intervention. Follow-up training consisted of providing participants with coaching (on-going training support and performance feedback), in order to strengthen what they learned during the training. The researcher provided the coaching.

Third aspect – Supervisor coaching – support and opportunity to use learning. This aspect of the independent variable assisted to increase participants' "motivation," (defined by this researcher as a person's desire to voluntarily participate in a corporate training program) and supervisor "support," (defined by this researcher as specific actions taken by an immediate supervisor in setting expectations for learning and usage of learning on the job, both before and after training delivery). Each participant's supervisor was instructed on how to *motivate* and *support* and provide an *opportunity to use* the newly acquired skills on the job. Supervisor coaching and feedback initially plays a major role in motivating the trainee but it should become less important as the trainee becomes more comfortable with the behavior and is able to maintain it over a longer period of time (Laker, 1990).

The researcher coached the supervisors on how to motivate and support their manager-leaders (participants), to use the training and to provide them with the opportunity to apply what they learned. The supervisors were instructed on the following topics, which they then discussed with their manager-leaders prior to the intervention:

- What the training is about

- How the training content relates to each manager-leader's job and why it is important
- Expectations of how the manager-leader applies the training content
- Expressions of encouragement to use the training content

The supervisors were also coached on the following post-intervention topics, which they then shared with their manager-leaders:

- Recap of pre-training discussion
- Plan to integrate new skills into the job context

Each participant was initially trained and then received researcher coaching and supervisor coaching during the study; all three participants received the training. What varied randomly was the onset of training.

LTSI Variables

The Learning Transfer System Inventory (LTSI) was used to assess the attribute independent variables. The (LTSI) Holton (2000), is a diagnostic instrument that can be used in a variety of ways including assessing potential transfer factor problems, targeting interventions designed to enhance transfer, conducting needs assessments for training programs to provide transfer skills to supervisors and trainees, etc. It is a new diagnostic tool developed as a means to provide a well-defined set of factors influencing transfer and how to measure them. The LTSI can be administered either at the end of a training program to provide diagnostic information about the transfer environment in time to intervene to improve it, or after training (i.e., thirty to sixty days) to diagnose what actually occurred. Holton (2000), however, advises, for now, to use a qualitative process to analyze LTSI results. He suggests that lower scores should be seen as candidates for

intervention, and then assessed through a second screen asking which of the factors are most important in the organizations culture. Low scores on factors important in an organization's culture are leverage points for change.

The current sixteen-factor LTSI version Holton (2000) was used for this study to evaluate the participants' general perceptions regarding prior training programs, as well as their perceptions about the Contextual Problem Solving workshop. The instrument emerged through factor analysis of responses from 1,616 people in a wide variety of organizations and training programs and the factors are consistent with transfer research (Baldwin & Ford, 1988; Ford & Weissbein, 1997), and have been validated by construct validation studies. "A convergent and divergent validity study showed that most of the constructs had only low correlations with other related variables (Booker, 1999), further reinforcing the uniqueness of the transfer system constructs. Some scales have also shown initial evidence of criterion validity in predicting motivation to transfer, learner perceptions of the training utility, and operating procedure use on the job..." (Holton, 2000, p.11).

Items are designed to measure individual perceptions of constructs, including individual perceptions of climate variables. *Climate* often refers to group-level shared interpretation of organizations, but it can also be an individual-level construct. Because transfer of learning refers to individual behaviors, it is most appropriate to assess individual perception of transfer factors because those perceptions will shape the individual's behavior (Holton, 2000).

The items on the LTSI are divided into sections representing two construct domains. The first contains sixty-three items measuring eleven constructs representing

factors affecting the specific training program attended. The second contains 26 items that measure five constructs that are not program specific but represent general factors that may influence any training program, Appendix B. The two construct domains provide a well-defined set of factors influencing learning transfer. Table 4 shows the constructs, their definitions, a sample item, and coefficient alphas for each of these scales (Holton, 2000, p. 12).

Of the total 89 items, however, 21 items (7, 8, 15, 18, 22, 11, 12, 20, 34, 35, 36, 41, 42, 46, 50, 51, 57, 62, 80, 81, 88) were used "for research purposes only" and were added by the authors of the instrument to strengthen some of the psychometric properties of some of the scales. Although the research items were not omitted when the instrument was administered to participants, only the original 68 research items were used to calculate item and scale scores because they had previously demonstrated their reliability and validity. The response choices for the scales ranged from (1) strongly disagree to (5) strongly agree, and (3) neither agree nor disagree.

Additionally, there were ten "negative items" (17, 26, 27, 61, 63, 64, 73, 74, 76, 77) that had to be reverse coded before calculating scale scores, which meant responses of (1) were replaced with a (5), (2) with a (4), (3) didn't change, (4) with a (2), and (5), with a (1). Each negatively worded item on the LTSI was recoded making all items positive, which gave them equal weight. The LTSI also included a "negative scale" (38, 44, 45) suggesting a high score meant that supervisors were actively opposing the transfer of learning. This could not be interpreted as a "good thing," if learning transfer was the

Table 5

Constructs, Definitions, Sample Items, and Coefficient Alphas (Holton, 2000)

Factor	Definition	Sample Item	Number of Item	α
Training Specific Scales				
Learner Readiness	Extent to which individuals are prepared to enter and participate in training	Before the training, I had a good understanding of how it would fit my job-related development.	4	.73
Motivation to Transfer	Direction, intensity, and persistence of effort toward using in a work setting skills and knowledge learned	I get excited when I think about trying to use my new learning on my job.	4	.83
Positive Personal Outcomes	Degree to which applying training on the job leads to outcomes that are positive for the individual	Employees in this organization receive various perks when they use newly learned skills on the job.	3	.69
Negative Personal Outcomes	Extent to which individuals believe that not applying skills and knowledge learned in training will lead to negative personal outcomes	If I do not use my training, I will be cautioned about it.	4	.76
Personal Capacity for Transfer	Extent to which individuals have the time, energy, and mental space in their work lives to make changes required to transfer learning to the job	My workload allows me time to try the new things I have learned.	4	.68
Peer Support	Extent to which peers reinforce and support use of learning on the job	My colleagues encourage me to use the skill I have learned in training.	4	.83
Supervisor Support	Extent to which supervisors and managers support and reinforce use of training on the job	My colleagues encourage me to use the skills I have learned in training.	6	.91
Supervisor Sanctions	Extent to which individuals perceive negative responses from supervisors and managers when applying skills learned in training	My supervisor opposes the use of the techniques I learned in training.	3	.63
Perceived Content Validity	Extent to which trainees judge training content to reflect job requirements accurately	What is taught in training closely matches my job requirements.	5	.84

(table continued)

Table 5 (continued)

Transfer Design	Degree to which training has been designed and delivered to give trainees the ability to transfer learning to the job, and training instructions match job requirement	The activities and exercises the trainers used helped me know how to apply my learning.	4	.85
Opportunity to Use	Extent to which trainees are provided with or obtain resources and tasks to use training on the job	The resources I need to use what I learned will be available to me after training.	4	.70
General Scales				
Transfer Effort – Performance Expectations	Expectations that effort devoted to transferring learning will lead to changes in job performance	My job performance improves when I use new things that I have learned.	4	.81
Performance – Outcomes Expectations	Expectations that changes in job performance will lead to valued outcomes	When I do things to improve my performance, good things happen to me.	5	.83
Resistance to Change	Extent to which prevailing group norms are perceived by individuals to resist or discourage the use of skill and knowledge acquired in training	People in my group are open to changing the way they do things.	6	.85
Performance Self-Efficacy	The individuals' general belief that they are able to change their performance when they want	I am confident in my ability to use newly learned skills on the job.	4	.76
Performance Coaching	Formal and informal indicators from an organization about an individual's job performance	After training, I get feedback from people about how well I am applying what I learned.	4	.70

goal. For all other scales in the LTSI, the higher the scale scores, the better (i.e., the more that element was a catalyst as opposed to a barrier).

Observed Dependent Variable

The dependent variable is "learning transfer," which equates to behavioral changes that should occur, as a result of the intervention. The following describes how the dependent variable was observed and measured:

- *Observations of Target Behavior*

  The *Target Behaviors,* Appendix A, consist of 22 different behaviors associated with problem solving. The first four, *supporting behaviors,* are not contained within the Analysis model and the remaining 18, *analysis model behaviors,* are contained in the Analysis model. All, however, are based on the precepts of contextual problem solving that will be used during the training. Observations are recorded using the *Guide for Researcher's Observations of Target Behaviors,* Appendix A, as a framework, prior to the intervention and after the intervention, to determine to what extent learning transfer has occurred.

Procedures for Data Collection

One of the advantages of using the multiple baseline across subjects research method is that it allows the researcher to function simultaneously as teacher and researcher, as well as to study a problem in great detail (Wood, Frank, & Wacker, 1998). This is very important because this researcher conducted the training during the intervention phase. Wood et al. also indicate that this approach is useful in the development of student skills. This is highly significant because learning transfer is directly related to the enhancement of problem solving skills.

According to Gliner and Morgan (2000):

> The key to multiple baseline single subject studies is that the investigator intervenes at a randomly selected time, and observes the effect on only one of the baselines while the other two baselines should be unchanged. This type of design eliminates the internal validity threat of history because one would expect that if some external event was altering behavior, it would affect all participants...not just one (p. 113).

Figure 5 is a schematic diagram of the design and procedure for the multiple baseline across subjects design showing baseline, intervention, and follow-up by the researcher and supervisor.

Participant	Baseline						Intervention/Training				Follow-up – Short Term 7 Days after training					Follow-up – Intermediate Term 30 Days after training			Follow-up – Long-term 60 Days after training		
	February 2004											March 2004				March 2004			April 2004		
	9 M	11 W	13 F	17 T	18 W	20 F	23 M	24 T	25 W	26 TH	27 F	1 M	2 T	3 W	4 TH	5 F	24 W	26 F	29 M	26 M	26 M	26 M
1	BO	BO SC LG	BO	BO	BO	BO	**RI** LS	O		O		O RC				SC	O RC			O RC LG LS		
2	BO	BO SC LG	BO	BO	BO	BO	BO	BO	**RI** LS	O		O		O RC		SC		O RC			O RC LG LS	
3	BO	BO SC LG	BO	BO	BO	BO	BO	BO	BO	**RI** LS	O		O		O RC	SC			O RC			O RC LG LS

BO – Baseline Observations by Researcher

O – Post Intervention Observations by Researcher

RI – Random Assignment to start Intervention/Training

LG – LTSI – General

LS – LTSI – Specific

SC – Supervisor Coaching

RC – Researcher Coaching

Figure 5. Schematic diagram of the design and procedure for the multiple baseline across subjects design.

Baseline Data Phase

The first phase of this research approach (pre-intervention) involves establishing a stable baseline for each participant (manager-leader) prior to the intervention, since the subjects serve as their own controls. Therefore, controlling procedures, rather than controlling the group was emphasized.

The following procedures were used to collect baseline data during the first phase of the research:

- The researcher observed each participant's behavior while s/he was engaged in problem solving activities during the course of his/her prescribed daily work schedule. These observations were recorded as "BO," baseline observations on Figure 5. Since it was impractical to completely eliminate eye contact between the researcher and the participant during the observations, the researcher positioned himself, when possible, to avoid any eye contact with the participant.

Because this study was predicated on affecting behavioral changes, pre-intervention target behaviors had to be observed and recorded until stable behavior patterns emerged within each participant that indicated minimal variability and no upward or downward trend. To accomplish this, the researcher used the Guide for Researcher's Observations of Target Behaviors (GROTB), Appendix A, to visually observe each participant, while engaged in his/her daily activities, at the Home Loan's Division of the company.

In this field study, the researcher separately accompanied each participant, while s/he performed her/his daily activities, and recorded target behaviors that occurred during

formal or informal meetings that involved problem solving situations. As shown in Figure 5, pre-intervention baseline data was recorded on at least six occasions over two weeks for each participant. The sequence of events occurred in the following manner:

1. Before the study began, the researcher met with the participants' supervisor to establish criteria, under which a manager-leader should or should not involve the supervisor in the problem-solving process.
2. The researcher met with each participant initially to inform him/her of the purpose and procedures and to obtain informed consent.
3. As shown by "SC," supervisor coaching in Figure 5 near the beginning of the baseline phase, the supervisor individually coached each participant, to provide incentive and support.

Intervention Training Phase

At the end of the baseline phase, the second phase (intervention) began. When participant baselines began stabilizing, the sequence of events occurred in the following manner:

1. Figure 5 shows that a first participant was randomly assigned to receive the intervention and then complete the LTSI (specific). The researcher obtained baseline data on the other two participants.
2. After two days, a second participant was randomly selected to receive the intervention and then complete the LTSI (specific). The researcher continued to obtain a baseline on participant three, who had not yet received the intervention, and would make measurements on participant one.

3. The day after the second participant received the intervention; the remaining (third) participant received the intervention and then completed the LTSI (specific).
4. On workdays one, three, and five, after each participant had received the intervention, s/he would be observed for changes in target behaviors.
5. Post-intervention supervisor coaching illustrated in Figure 5 occurred for all participants, after the five-day post training observations had been completed.
6. Post intervention researcher coaching /feedback occurred immediately for each participant, after he/she had completed the five day post-training observations.
7. Researcher coaching also occurred at thirty and sixty days post training.

Follow-up Phase

- In addition, observations were made of target behaviors at thirty and sixty days post-training.
- Finally, the participants were asked to complete the LTSI (specific and general) after the sixty-day observation and coaching session.

Pilot Study Results

Pilot data were collected at three different locations. The first location was the corporate headquarters of a major U. S. Graduate School of programs in business and technology management, where the researcher, who was testing the effectiveness of the GROTB, observed the Director of Center Operations, Midwest Region and the Regional Manager, while they were engaged in problem solving activities. Each was observed on separate occasions for approximately one and a half to two hours. The second location

was the corporate headquarters of one of the worlds leading Internet connectivity providers, where the researcher, again tested the effectiveness of the GROTB for the same length of time as previously, however, this time with the Director of Global Marketing. At the third location, the Home Loans Division of the organization where the actual research took place, the researcher conducted the Contextual Problem Solving workshop for the first time, for twelve middle and executive level managers. After the presentation, the LTSI was administered to all participants.

The GROTB results were extremely beneficial in that they lead to modifications of the instrument, which resulted in an expanded and more effective tool for collecting data. Of greater importance regarding changes to the instrument, was the inclusion of two separate observational categories and additional observational classifications.

The first major change to the GROTB came after the instrument was used at the first location. The researcher realized that the instrument should have been divided between behaviors derived strictly from the Analysis model and *supporting behaviors* that were not part of the Analysis model, but were just as important. The GROTB was changed to include a category of four "Supporting Behaviors" and a category of seventeen "Analysis Model Behaviors," from the original single category of eleven classifications. The reason for the separate categories was to make the instrument more versatile, for the purpose of determining if there was any distinctive pattern between supporting behaviors and Analysis model behaviors. By initially lumping all the classifications into one category, it would have made it more difficult to differentiate between the effectiveness of the Analysis model behaviors versus the efficacy of the supporting behaviors.

The second modification to the GTROB, occurring from pilot testing at the first location, which was not as critical as the first modification but could definitely cause problems in data collection if not corrected, was the reformatting of the layout of the instrument. The researcher quickly realized, while recording findings from observations onto the instrument that it was not possible to accurately keep track of more than one problem solving event, on one set of data collection sheets. The original numbering system (S1, S2, S3, S4), (S) meaning situation, which appeared on each data collection sheet of each set of GROTB's, created a more complicated and less effective way of recording more than one observable problem solving situation or event, at a time. This was important because during a participant's observation period, the individual may have been engaged in more than one problem solving activity, which would have had to be recorded and kept separate from the others, during that same period. The modified GTROB allowed the researcher to circle the number and time of occurrence of the problem situation under observation, and utilized only one set of data collection sheets for each event, Appendix A. In this way, there would be no confusion, as to which problem event was being observed and, at which time it was being observed. Also, in order to make each box containing the classification description easier to identify, one "bolded" word was inserted that summed up the description.

The second major change came after the instrument was used at the second location. The researcher concluded that an additional component (Scope) was need in the Analysis Model. This not only meant that the GROTB had to be modified but that the Analysis Model also had to be modified. This additional component raised the Analysis

model classifications from seventeen to eighteen, bringing the total number of classifications between the two categories to twenty-two.

One other modification to the GROTB that resulted from the pilot study was the rewording of the original GROTB's fourth classification, from – The participant is observed *defining* the problem by communicating or requesting the facts of the problem from others, to – The participant is observed using *visual representations* to identify and analyze the various aspects of the problem. This new classification was placed under the heading *Supporting Behaviors,* in the modified GROTB.

The results of the pilot study from the third location indicated that no changes had to be made to the Contextual Problem Solving Training Model and workshop. Participant feedback and LTSI results were very positive and substantiated for all intent and purpose that the presentation was a success. Moreover, the First Vice President responsible for sponsoring the initiative indicated that he regarded the Contextual Problem Solving Training Model as a highly effective tool for helping his associates in the Home Loans Division, develop the skills required to analyze and solve difficult problems in their job environment.

Data Analysis

The data analysis primarily consisted of a visual examination of the data, rather than a statistical analysis. This was accomplished by taking repeated and frequent measurements throughout the study. When the baseline measurements began stabilizing, then the intervention for the first randomly assigned participant began, while baseline measurements continued for the other participants. After the intervention period, the data

should have indicated that learning transfer had occurred vis-à-vis an increase in target behaviors that involved problem solving situations.

This method of analysis was employed because it was the most practical and effective way to conduct this research under the constraints of a limited number of participants, which precluded random assignment of organizations or participants, and accessibility to control and comparison groups. Also, the LTSI scores were scrutinized using a qualitative process to analyze the results, in order to examine the effects of the intervention regarding the enhancement of learning transfer.

A pilot study, as discussed previously, with individuals other than those who participated in the actual research, was conducted to test for unforeseen events or any previously undetected strategies, and fine-tune the GROTB.

CHAPTER 4: RESULTS

Introduction

This study investigated the extent to which knowledge and skills acquired by manager-leaders, during a leadership skills development program in *Contextual Problem Solving*, had been successfully transferred to the job environment. Transfer is represented by how much learned behavior had been generalized to the job context and maintained over a period of time on the job.

Quantitative analysis methods were used to examine the impact the learning transfer model had on transferring knowledge and skills, acquired during the intervention/training, to the job. To facilitate greater understanding, the resulting data from the Learning Transfer System Inventory was compared against a subset of respondents, in a study conducted by Holton, Chen, and Naquin (2003), comparing transfer systems across three organization types, eight organizations, and nine types of training (see Chapters 2 and 5).

Analysis of Short Term Pre-Post Intervention Effects

The latest version of the Learning Transfer System Inventory was used to evaluate the participants' general perceptions regarding prior training programs, as well as their perceptions about the Contextual Problem Solving workshop.

A critical aspect in analyzing the LTSI results included following-up the quantitative survey data with qualitative analysis, to obtain more detail about what the

numbers meant. That is, the LTSI was used to point this researcher toward potential catalysts or barriers in the organization's learning transfer system – thus the scale scores acted as "indicators" of where there might be potential problems, as well as potential strengths. However, the scale scores did not yield substantive results about the precise nature of the different elements of the transfer system. For example, if supervisor support was low (based on survey results), then to determine more accurately the reason(s) for the low support a follow-up investigation with the participants would have had to be conducted, in order to get more insight and detail about what the supervisor didn't do or should have done more effectively, to support transfer.

In conjunction with the results of the LTSI scales, the Guide for Researcher's Observations of Target Behaviors was used to further evaluate and draw conclusions about the precise nature of the different elements of the transfer system. The GROTB results will be discussed first, followed by LTSI results.

Pre Intervention/Training GROTB

GROTB – Baseline Observations by Researcher. The purpose of the Guide for Researcher's Observations of Target Behaviors was to identify particular problem solving behaviors targeted for change, in order to determine to what extent learning transfer had occurred. It was used to assess the dependent variable, in order to determine which of the twenty-two behaviors associated with problem solving impacted the research participants.

Figures 6 through 8 reflect the total number of observed problem solving target behaviors exhibited by each research participant prior to having received the intervention/training.

Figure 6 shows research participant one (P 1) behaving in a manner consistent with a few of the 22 target behaviors associated with problem solving, on the first, third, fourth, and fifth days of observation. On observation days two and six, no target behaviors were observed. The average number of observed behaviors during this baseline period was 2.16 for P 1.

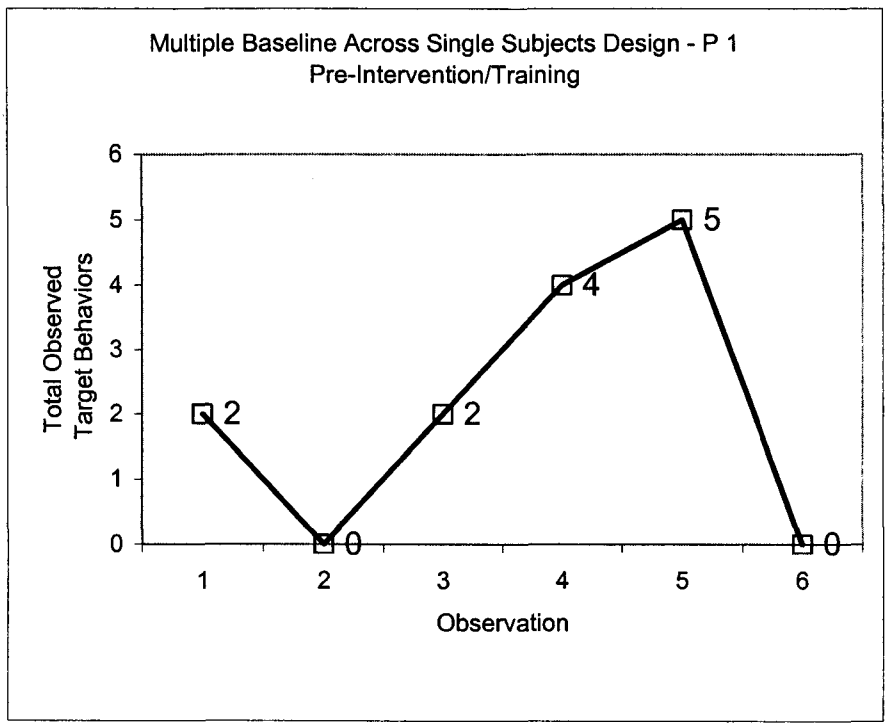

Figure 6. Total observed target behaviors for participant 1.

Figure 7 shows research participant two (P 2) behaving in a manner consistent with a few of the 22 target behaviors associated with problem solving, on the first and fifth days of observation. On days two, three, four, six, seven, and eight, no target behaviors were observed. The average number of observed behaviors during this baseline period was 1.25 for P 2.

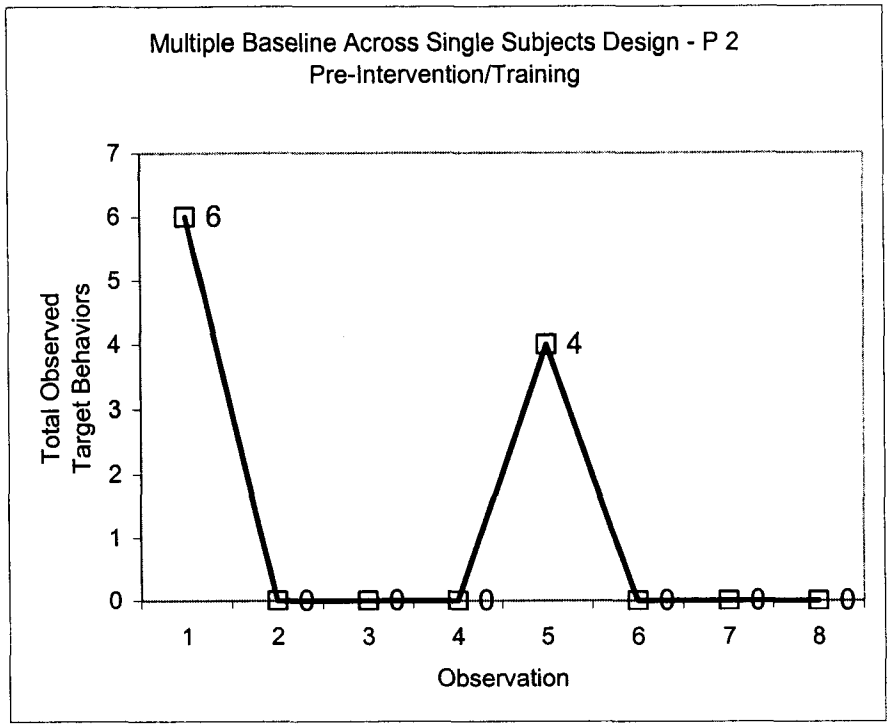

Figure 7. Total observed target behaviors for participant 2.

Figure 8 shows research participant three (P 3) behaving in a manner consistent with a few of the 22 target behaviors associated with problem solving, on the second, fourth, fifth, and ninth days of observation. On days one, three, six, seven, and eight, no target behaviors were observed. The average number of observed behaviors during this baseline period was 1.44 for P 3.

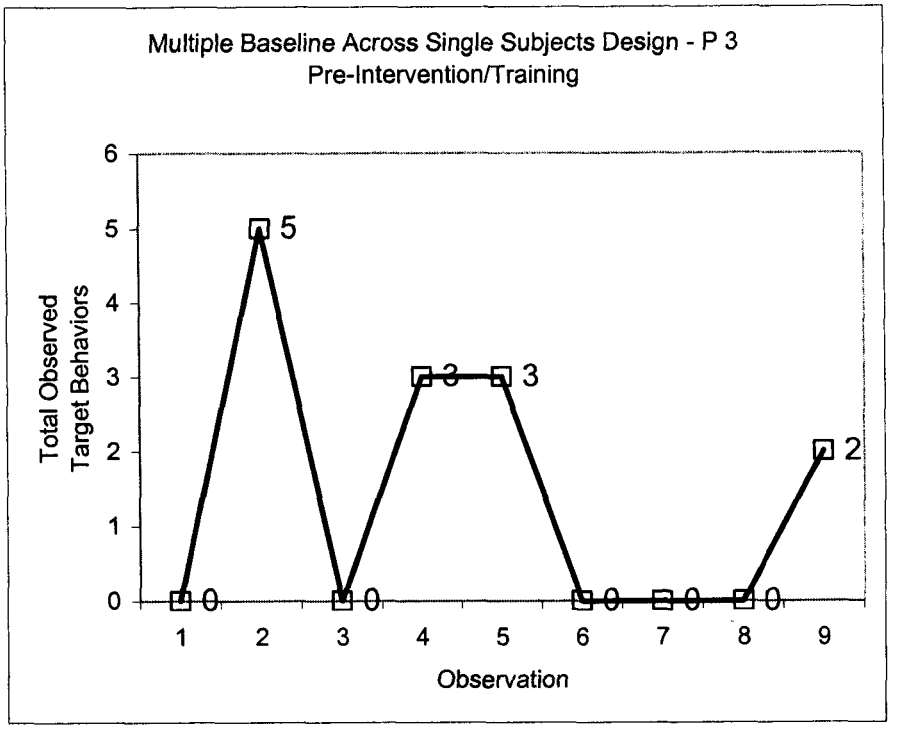

Figure 8. Total observed target behaviors for participant 3.

Post Intervention/Training GROTB

GROTB – Observations by Researcher. Figures 9 through 11 reflect the total number of observed problem solving target behaviors exhibited by each research participant, both before and after having received the intervention/training. Although baseline observations were made on a greater number of days for participant two (i.e., eight) and participant three (i.e., nine), all three participants were observed for the same number of days after having received the intervention/training. The span of the four-day post intervention/training observation period was thirty days (Intermediate Term), with the first three observations (Short Term) conducted shortly after the intervention/training.

Figure 9 shows participant one was observed for six days prior to the intervention/training, and four days after the intervention/Training. In relation to pre

intervention/training, post intervention/training reflects an increase of 300% in the use of problem solving behaviors (see Table 6).

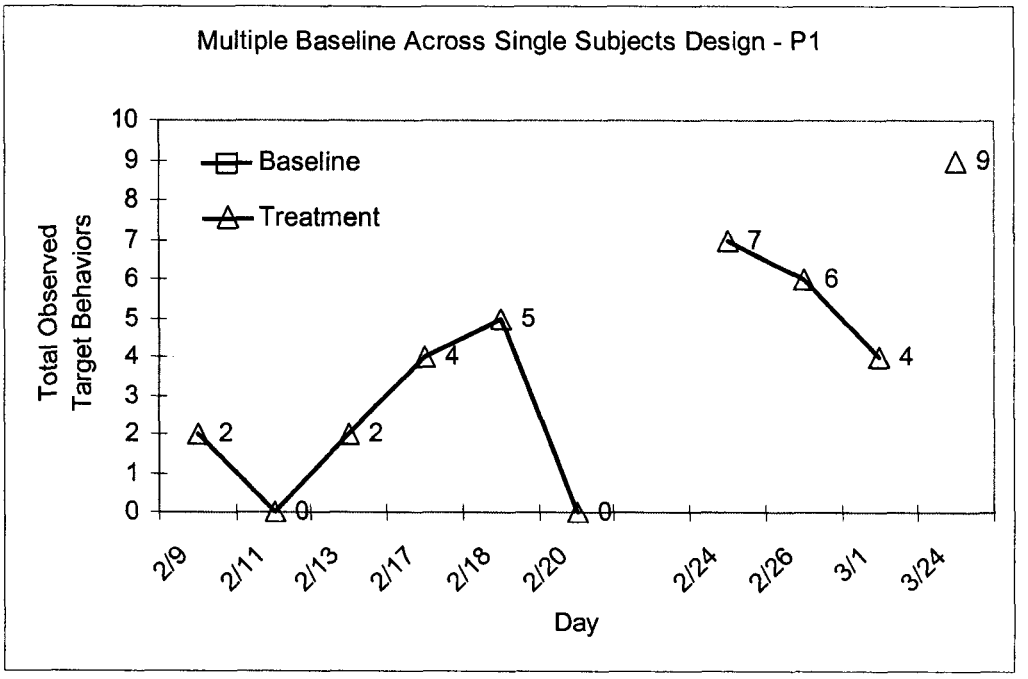

Figure 9. Total observed target behaviors – pre/post intervention/training for participant 1.

Figure 10 shows participant two was observed for eight days prior to the intervention/training, and four days after the intervention/Training. In relation to pre intervention/training, post intervention/training reflects an increase of 380% in the use of problem solving behaviors (see Table 6).

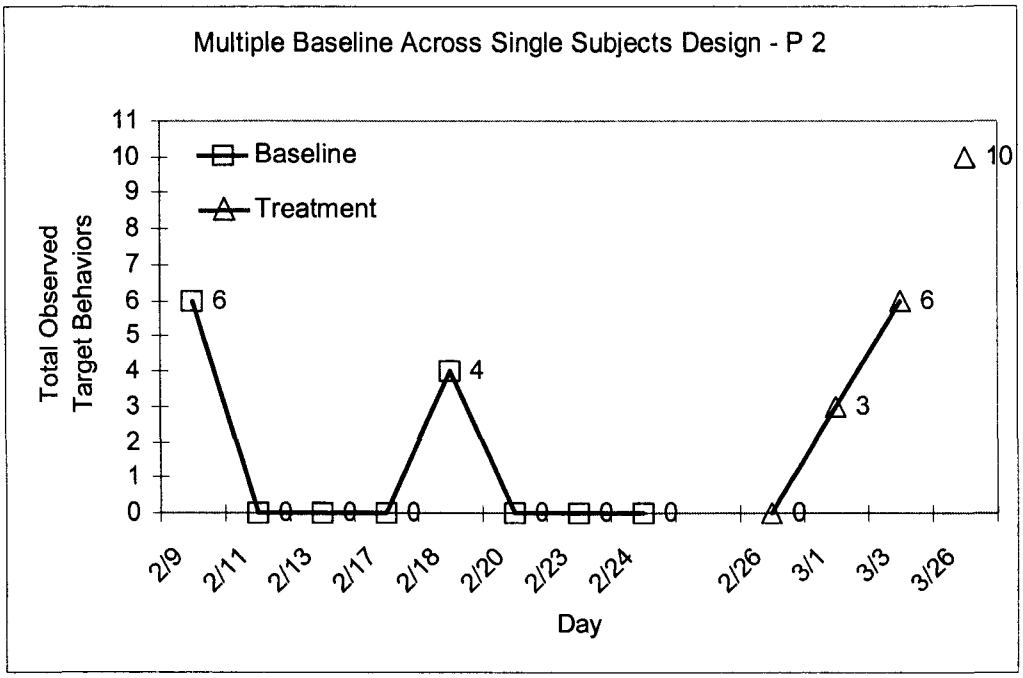

Figure 10. Total observed target behaviors – pre/post intervention/training for participant 2.

Figure 11 shows participant three was observed for nine days prior to the intervention/training, and four days after the intervention/Training. In relation to pre intervention/training, post intervention/training reflects an increase of 607% in the use of problem solving behaviors (see Table 6).

Table 6 compares the pre-and-post intervention/training observation results of the three participants. Post Intervention/Training Behavior averages are compared with Pre Intervention/Training Behavior averages, to reveal substantial increases.

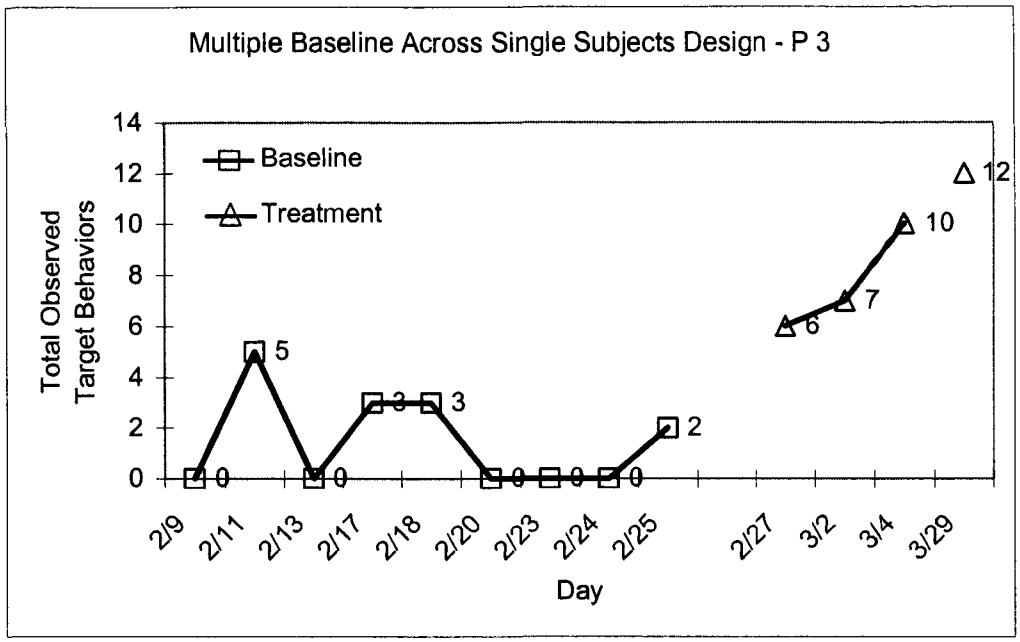

Figure 11. Total observed target behaviors – pre-post intervention/training for participant 3.

Table 6

Guide for Researcher's Observations of Target Behaviors 30-Day Results Comparison of P 1, P 2, P 3

Research Participant	No. of Baseline Days Observed	Pre-I/T Observed Behaviors	Avg.	No. of Days Observed	Post-I/T Observed Behaviors	Avg.	% Increase Days 1-30
P 1	6	13	2.16	4	26	6.50	300
P 2	8	10	1.25	4	19	4.75	380
P 3	9	13	1.44	4	35	8.75	607

Pre Intervention/Training LTSI General

LTSI – Training in General Scales. Tables 6 through 10 reflect the individual item scores and the scale scores for the three research participants regarding Training in General, which was administered prior to receiving the intervention/training.

Table 7 shows that the scale score average (4.2) of the three participants indicates they think effort devoted to transferring learning will improve their job performance. This seems to be truer of participant 3, who had a scale score of (5.0 - strongly agree), than for participant 1, who scored (3.5 - between neutral and agree) on this scale.

Table 7

Item Ratings and Scale Scores for the LTSI Training in General Scale: Transfer Effort – Performance Expectations, Pre Intervention

Item	Item #	P1	P2	P3	Average
Learning new things improves job performance	65	3	4	5	4.0
When I work at learning I do my job better	66	4	4	5	4.3
Training helps me increase my productivity	69	4	4	5	4.3
The more training I apply, the better I do my job	71	3	4	5	4.0
Item Totals		14	16	20	
Scale Score		3.5	4.0	5.0	4.2

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Table 8 shows that the scale score average (3.5) of the three participants indicates they think there is not a high expectation that changes in job performance, as a result of training in general, will lead to valued outcomes. Note that participant 3, who was very positive about the value of Transfer Effort – Performance Expectations, was only neutral about Performance – Outcomes Expectations. Also, note items 64 (The organization does not really value my performance), 70 (People around here notice when you do something well), and 72 (My job is ideal for someone who likes to get rewarded when they do something really good), rated as essentially neutral. Remember that these scales were administered before the specific training was given for this study, and are about training in general. Possibly, the participants are thinking about past training programs.

Table 8

Item Ratings and Scale Scores for the LTSI Training in General Scale: Performance – Outcomes Expectations, Pre Intervention

Item	Item #	P1	P2	P3	Average
The org. does not value my performance	64*	4	3	3	3.3
Those who work get rewarded	67	4	4	2	3.3
Good things happen when performance improves	68	4	4	4	4.0
People notice when you do something well	70	4	4	4	4.0
This is the ideal job for high performer rewards	72	3	4	2	3.0
Item Totals		19	19	15	
Scale Score		3.8	3.8	3.0	3.5

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.
* Negatively worded item recoded to make it positive and give it equal weight with all other scale items.

Table 9 shows that the scale score average (4.4) of the three participants indicates they think prevailing group norms are favorable toward changing the way things are done. All three participants, especially participant 3, are optimistic about their perceptions that their group is not a barrier to change, particularly when it comes to using training to improve work performance.

Table 10 shows that the scale score average (4.1) of the three participants indicates confidence in their ability to use newly learned skills on the job. Again, participant 3 shows greater confidence in abilities, than participants 1 and 2. Participant 1, with a scale score of (3.5) shows the lowest.

Table 9

Item Ratings and Scale Scores for the LTSI Training in General Scale: Resistance/Openness to Change, Pre Intervention

Item	Item #	P1	P2	P3	Average
Status quo is preferred to trying new methods	73*	4	4	5	4.3
New techniques are ridiculed by others	74*	5	4	5	4.7
Group members are open to change	75	4	4	5	4.3
Group members are not willing to change	76*	4	4	5	4.3
Team is reluctant to try new things	77*	4	4	5	4.3
Team is open to change, to improve performance	78	4	4	5	4.3
Item Totals		25	24	30	
Scale Score		4.2	4.0	5.0	4.4

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.
* Negatively worded item recoded to make it positive and give it equal weight with all other scale items.

Table 10

Item Ratings and Scale Scores for the LTSI Training in General Scale: Performance – Self-Efficacy, Pre Intervention

Item	Item #	P1	P2	P3	Average
I'm confident I can use new skills at work	82	4	4	5	4.3
I never doubt my ability to use new skills	83	2	4	5	3.7
I overcome obstacles that hinder using new skills	84	4	3	5	4.0
I'm confident in using what I learned	85	4	4	5	4.3
Item Totals		14	15	20	
Scale Score		3.5	3.8	5.0	4.1

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Table 11 shows that the scale score average (2.9) of the three participants indicates that after training in general, there is not, per se, an expectation of any formal or

informal coaching or feedback regarding application of the training, to help trainees to use what they've learned, to improve job performance. Again, the ratings are based on the participants' past training experiences. Note that participants 2 and 3 are on the negative side of neutral, as are the overall scale scores for items 79 (After training, I get feedback from people on how well I am applying what I learn), 86 (People often tell me things to help me improve my job performance), and 89 (I regularly have conversations with people about how to improve my performance).

Table 11

Item Ratings and Scale Scores for the LTSI Training in General Scale: Feedback/Performance Coaching, Pre Intervention

Item	Item #	P1	P2	P3	Average
After training, I get feedback from people	79	2	2	4	2.7
People tell me things to help me improve	86	4	2	2	2.7
I know who will help me when I try new things	87	5	3	4	4.0
I talk with people to improve my performance	89	3	3	1	2.3
Item Totals		14	10	11	
Scale Score		3.5	2.5	2.8	2.9

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Short Term Post Intervention/Training LTSI Specific

LTSI – Specific Training Program Scales. Tables 11 through 21 reflect the individual item scores and the scale scores for the three research participants regarding the LTSI – Specific Training Program Scales, which was administered immediately after the intervention/training was received.

Table 12 shows that the scale score average (4.1) of the three participants indicates they felt they were, to some degree prepared in advance for the training, by

having some understanding and expectation of how the training might positively influence their job performance. Note these ratings are now based on the participants' experiences with this specific training program. Interestingly, the ratings appear to have a near even wide spread amongst the three participants (P 2 – 3.3; P 3 – 4.0; P 1 – 5.0), indicating a low to high understanding of possible expectations and outcomes before the training.

Table 12

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Learner Readiness, Short Term Post Intervention

Item	Item #	P1	P2	P3	Average
Before training, I knew how I would be affected	1	5	4	4	4.3
Before training, I knew how it would fit my job	9	5	3	4	4.0
Before training, I knew what to expect	10	5	3	4	4.0
Training outcomes were clear at the beginning	13	5	3	4	4.0
Item Totals		20	13	16	
Scale Score		5.0	3.3	4.0	4.1

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Table 13 shows that the scale score average (4.2) of the three participants indicates they thought the training was a motivator to use their new knowledge and skills, to do a better job. Note, however, that unlike participants 2 and 3 who showed near equal scale scores averages of (4.5) and (4.8) respectively, participant 1 showed a low scale score average of only (3.3). Also, note the item averages for 2 (Training will increase personal productivity), 4 (I believe the training will help me do my current job better), and 5 (I get excited when I think abut trying to use my new learning on my job), are

substantially higher, than item 3 (When I leave training, I can't wait to get back to work to try what I learned).

Table 13

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Motivation to Transfer, Short Term Post Intervention

Item	Item #	P1	P2	P3	Average
Training will increase personal productivity	2	4	5	5	4.7
I can't wait to get back to try what I learned	3	3	4	4	3.7
I believe training will help me do my job better	4	3	4	5	4.0
I get excited thinking about trying what I learned	5	3	5	5	4.3
Item Totals		13	18	19	
Scale Score		3.3	4.5	4.8	4.2

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Table 14 shows that the scale score average (2.8) of the three participants indicates they were basically neutral to slightly negative about the probability that monetary or intrinsic rewards will result through use of training.

Table 15 shows that the scale score average (1.8) of the three participants indicates there is little probability that personal negative consequences will result if what is learned in training is not used. Note participant 2 is closer to neutral than participants 1 and 3.

Table 14

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Personal Outcomes/Positive, Short Term Post Intervention

Item	Item #	P1	P2	P3	Average
Successfully using training will increase salary	6	2	3	3	2.7
Perks are received for using newly learned skills	16	1	3	3	2.3
If I do not use my training, I will not get a raise	17*	5	3	2	3.3
Item Totals		8	9	8	
Scale Score		2.7	3.0	2.7	2.8

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree. * Negatively worded item recoded to make it positive and give it equal weight with all other scale items.

Table 15

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Personal Outcomes/Negative, Short Term Post Intervention

Item	Item #	P1	P2	P3	Average
Employees are penalized for not using new skills	14	1	3	3	2.3
I will be reprimanded for not using new skills	21	1	2	1	1.3
I will be cautioned for not using new skills	23	1	2	1	1.3
It gets noticed if new training is not used	24	1	3	3	2.3
Item Totals		4	10	8	
Scale Score		1.0	2.5	2.0	1.8

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Table 16 shows that the scale score average (3.8) of the three participants indicates they don't believe their workload is a major barrier, such that it will prevent them from transferring new knowledge and skills that they acquired during this specific

training, to their jobs. But participant 1 is neutral about whether or not the workload will encumber learning transfer.

Table 16

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Personal Capacity for Transfer, Short Term Post Intervention

Item	Item #	P1	P2	P3	Average
My workload allows me time to try new things	19	4	4	4	4.0
I have time in my schedule to try new things	25	3	4	4	3.7
My priorities must change before I use training	26*	4	4	5	4.3
I wish I had time to do things the right way	27*	1	4	4	3.0
Item Totals		12	16	17	
Scale Score		3.0	4.0	4.3	3.8

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.
* Negatively worded item recoded to make it positive and give it equal weight with all other scale items.

Table 17 shows that the scale score average (3.2) of the three participants indicates they don't have high expectations regarding colleague support for using their newly acquired training skills on their jobs. Note participant 2 is the most positive, while participant 3 is slightly above neutral, and participant 1 is negative about receiving peer support.

Table 18 shows that the scale score average (2.4) of the three participants indicates there is little involvement regarding the extent to which the supervisor supports and reinforces the use of training on the job. Items 32 (My supervisor meets with me regularly to work on problems I may be having in trying to use my training) and 33 (My supervisor meets with me to discuss ways to apply training on the job) are rated especially low. Participant 2, however, is more neutral, than participants 1 and 3.

Table 17

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Peer Support, Short Term Post Intervention

Item	Item #	P1	P2	P3	Average
My peers appreciate it when I use my new skills	28	2	4	3	3.0
My peers encourage me to use my new skills	29	2	4	3	3.0
My peers expect me to use what I learn	30	2	4	4	3.3
My peers are patient when I try out new things	31	3	4	3	3.3
Item Totals		9	16	13	
Scale Score		2.3	4.0	3.3	3.2

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Table 18

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Supervisor/Manager Support, Short Term Post Intervention

Item	Item #	P1	P2	P3	Average
My boss helps me work out training problems	32	1	3	1	1.7
My boss discusses with me how to apply training	33	1	3	1	1.7
My boss shows interest in what I learned	37	3	4	3	3.3
My boss sets goals to encourage me to use train.	39	2	3	2	2.3
My boss lets me know I'm doing a good job	40	2	3	3	2.7
My boss sets realistic goals to use my training	43	3	3	2	2.7
Item Totals		12	19	12	
Scale Score		2.0	3.2	2.0	2.4

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Table 19 shows that the scale score average (1.9) of the three participants indicates they believe their supervisor does not oppose, and is unlikely to sanction the them for using newly acquired training skills on the job. This is especially clear on item

38 (My supervisor opposes the use of the techniques I learned in training). Item 44 (My supervisor would use different techniques than those I would be using if I use my training), however, is more neutral.

Table 19

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Supervisor/Manager Sanctions, Short Term Post Intervention

Item	Item #	P1	P2	P3	Average
My boss opposes the use of my new training	38**	1	1	1	1.0
My boss uses different skills, than those I learned	44**	4	3	2	3.0
My boss thinks I'm ineffective with new training	45**	1	3	1	1.7
Item Totals		6	7	4	
Scale Score		2.0	2.3	1.3	1.9

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree. ** Negative scale item. High scale score on this scale would indicate that supervisors are actively opposing that transfer of learning.

Table 20 shows that the scale score average (3.9) of the three participants indicates they believe what was taught in training closely matched their job requirements, especially for participant 3.

Table 21 shows that the scale score average (4.3) of the three participants indicates they believe the activities and exercises the trainer used during training, helped them in their ability to transfer learning to the job, and also that training instructions given during the training matched the job requirements. Participant 3 ranked very high on all four items, whereas participants 1 and 2 still ranked above neutral.

Table 20

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Perceived Content Validity, Short Term Post Intervention

Item	Item #	P1	P2	P3	Average
Training aids are similar to what I use on the job	47	3	4	4	3.7
Training methods are similar to I use on the job	48	4	4	4	4.0
I like how training seems so much like my job	49	4	3	4	3.7
Training instruction matches my job requirements	58	4	4	5	4.3
Training situations closely match those of my job	59	4	3	5	4.0
Item Totals		19	18	22	
Scale Score		3.8	3.6	4.4	3.9

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Table 21

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Transfer Design, Short Term Post Intervention

Item	Item #	P1	P2	P3	Average
Training activities help me apply the learning	52	3	4	5	4.0
The trainers know how I will use what I learn	53	4	4	5	4.3
The trainers used examples to help me use skills	54	4	4	5	4.3
The trainers made me feel confident w/new skills	55	4	4	5	4.3
Item Totals		15	16	20	
Scale Score		3.8	4.0	5.0	4.3

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Table 22 shows that the scale score average (4.2) of the three participants indicates they believe the resources needed to apply what they learned during training were available to them after the training. Although participants 1 and 2 ranked equally high on the positive side of neutral, again participant 3 ranked higher than both. Note

item 63 (It will be hard to get materials and supplies I need, to use the skills and knowledge learned in training) had the highest average, in other words rated very highly by the three participants, of the four items.

Table 22

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Opportunity to Use Learning, Short Term Post Intervention

Item	Item #	P1	P2	P3	Average
I have the resources needed to use what I learned	59	4	4	5	4.3
There are enough available human resources	60	3	4	4	3.7
Budget limitations prevent me from using training	61*	4	4	4	4.0
It's hard to get materials & supplies to use skills	63*	5	4	5	4.7
Item Totals		16	16	18	
Scale Score		4.0	4.0	4.5	4.2

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree. *Negatively worded item recoded to make it positive and give it equal weight with all other scale items.

Summary of Pre Intervention and Short Term LTSI Responses

The Learning Transfer System Inventory ranged from strongly disagree to strongly agree. To assess the spread, a five-point frequency distribution was used. The highest or best possible score was 5, and the lowest or least acceptable score was 1, except for the negative scale items, which were the exact opposite – (1) was the highest or best possible score, etc. Table 23 is a summary of the pre intervention and short term scale scores of the sixteen factors affecting the two construct domains (Training in General items and Specific Training Program items) of the LTSI.

Table 23

Summary of Pre Intervention and Short Term General and Specific Scale Scores, at the Beginning of this Study

LTSI	Pre Intervention Scale Scores
Training in General Scales	
Transfer Effort – Performance Expectations	4.2
Performance – Outcomes Expectations	3.5
Resistance – Openness to Change	4.4
Performance Self-Efficacy	4.1
Feedback/Performance Coaching	2.9
Specific Training Program Scales	*Short Term*
Learner Readiness	4.1
Motivation to Transfer	4.2
Personal Outcomes/Positive	2.8
Personal Outcomes/Negative	1.8
Personal Capacity for Transfer	3.8
Peer Support	3.2
Supervisor/Manager Support	2.4
Supervisor/Manager Sanctions	1.9**
Perceived Content Validity	3.9
Transfer Design	4.3
Opportunity to Use Learning	4.2

Note. ** Negative scale item. High scale score on this scale would indicate that supervisors are actively opposing that transfer of learning.

In the short term post intervention/training scale scores (Specific Training Program Scales), 8 out of 11 scales – Learner Readiness, Motivation to Transfer; Personal Outcomes/Positive, Personal Capacity for Transfer, Supervisor/Manager Sanctions, Perceived Content Validity, Transfer Design, and Opportunity to Use Learning, have high scores (i.e., ranging from 3.8 to 4.3). In the pre intervention/training scale scores (Training in General Scales), three out of five – Transfer Effort –

Performance Expectations, Resistance/Openness to Change, and Performance Self-Efficacy, have high scores (i.e., ranging from 4.1 to 4.2).

In the short term post intervention/training scale scores (Specific Training Program Scales), three scales – Personal Outcomes/Positive, Peer Support, and Supervisor/Manager Support have low to neutral scores (i.e., ranging from 2.4 to 3.2). In the pre intervention/training scale scores (Training in General Scales), two scales – Performance-Outcomes Expectations and Feedback/Performance Coaching have neutral scores (i.e., ranging from 2.9 to 3.5).

Analysis of Short to Intermediate Term Intervention Effects

Research Hypotheses and Results

The following research hypotheses, stated in Chapter 1, were addressed using a multiple baseline single subjects design:

1. An intervention based on the Contextual Problem Solving Training Model will positively affect learning transfer in manager-leaders in the short term, intermediate term, and long term.
2. The LTSI specific scale scores will be relatively high immediately after the training and remain high at 60 days past intervention.

The short term (days, 1, 3, 5) and intermediate term (day 30) post intervention/training period GROTB results indicated that learning transfer had occurred for each of the three research participants, based on the Contextual Problem Solving Training Model, as proposed in the first hypothesis (see Table 6).

During the pre intervention/training phase, total observed behaviors of each of the three participants, over the course of the observation period, averaged from 1.25 to 2.16;

that is similar low numbers of observed behaviors. These low numbers were not surprising, as the research participants had no previous exposure to the Contextual Problem Solving workshop. Still, it was expected that some of the problem solving behaviors would be exhibited, since all three participants were college educated and at least mid-level financial managers with several years of professional working experience in finance and accounting.

During the post intervention/training phase, P 1 and P 2 had similar high percentage increase measures (300% and 380%). But P 3 had a much greater increase; six times greater than that of the pre intervention/training score. When comparing this result to the LTSI Specific Training Program Scale scores for the three research participants, P 3 had higher scores than P 1 and P 2, for Learner Readiness, Motivation to Transfer, Personal Capacity for Transfer, Supervisor/Manager Sanctions, Perceived Content Validity, and Transfer Design. Additionally, P 3 had higher scores in the LTSI Training in General Scale, in three out the five categories including, Transfer Effort – Performance Expectations, Resistance/Openness to Change, and Performance – Self-Efficacy.

Also, as proposed in the hypothesis, the LTSI specific scale scores were relatively high at the beginning of the study. More than half were over 4.0. In order, however, to obtain an accurate perspective, the Personal Outcomes/Negative scale and the Supervisor/Manager Sanctions scale had to be reverse coded.

Analysis of the data from the GROTB and the LTSI indicates a successful learning transfer outcome for all three research participants, for the one-to-thirty-day (short and intermediate) post intervention/training period. Especially notable, are the *Treatment* values, in contrast to the *Baseline* values (see Figures 9, 10, 11).

Aggregate Baseline values of the *Total Observed Target Behaviors* (y axis), ranged from (0, lowest) to (6, highest), where (0) was observed for all three research participants on two or more days. But aggregate Treatment values of the *Total Observed Target Behaviors,* ranged from (0, lowest) to (12, highest). Moreover, only P 2 had a (0) value, whereas P 1 and P 3 had lowest values of (4) and (6) respectively (see Figures 9, 10, 11).

Similarly, several LTSI General and Specific scale scores pointed to potential positive learning transfer. Of special interest within the Specific Program Training Scales were Learner Readiness, Motivation to Transfer, Transfer Design, and Opportunity to Use Learning, which had high aggregate scores. Within the Training in General Scales were Transfer Effort – Performance Expectations and Performance Self-Efficacy, which also had high aggregate scores. More so than the other scales, these particular scales were indicative of behaviors over which the research participants had control over potential learning transfer.

Analysis of Long Term Intervention Effects

60-Day Post Intervention/Training GROTB

GROTB – Observations by Researcher. Figure 12 reflects the total number of observed problem solving target behaviors exhibited by each research participant on day 60 (Long Term), after having received the intervention/training.

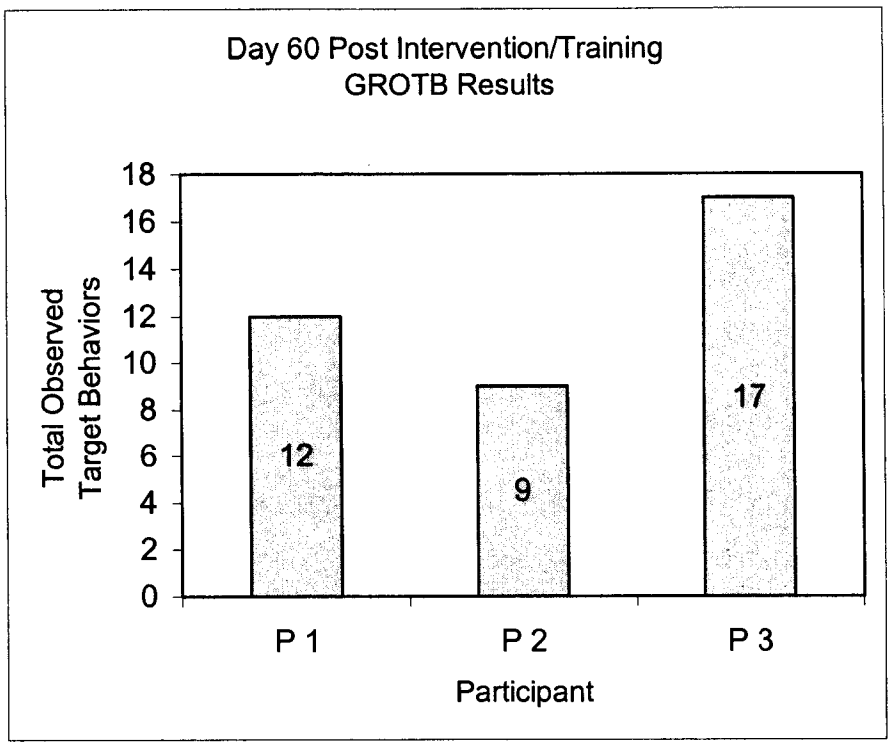

Figure 12. Total observed target behaviors of the three participants – 60-day post intervention/training.

Figure 13 reflects the total number of observed problem solving target behaviors exhibited by each research participant, on day 30 (Intermediate Term), after having received the intervention/training.

Notice that Figures 12 and 13 (bar graphs) are different from the previous (line graphs) in Figures 9, 10, and 11, which reflected the day by day scores of each participant over the four observation dates that occurred after the intervention/training, rather than a single day of observations, (i.e., day 30 or day 60), of all three participants. Also, notice that participant three is highest on both day 30 and day 60 of the Post Intervention/Training GROTB Results.

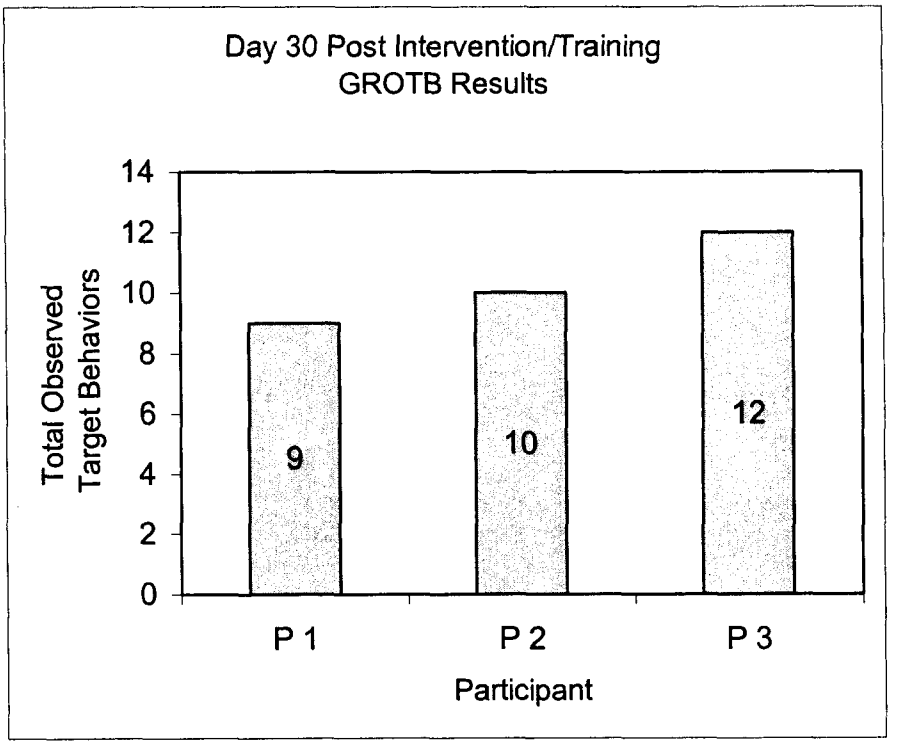

Figure 13. Total observed target behaviors of the three participants – 30-day post intervention/training.

Table 24 compares the short, intermediate, and long term post intervention/training results. Notice the increase for each participant on day 60 is substantial compared to the increase from days 1-3 and more than that which was recorded on day 30 for two of the three participants. Table 24 shows the short term (3-day average) observations of target behaviors, and the intermediate term observations at day-30, in order to reflect the steady increases in total observed target behaviors, from the period immediately following the intervention/training, to the final data collection period at day 60.

Table 24 also shows that the total observed target behaviors compared to the baseline for participant 1 increased to 555% at day 60. Participant 2 increased to 720% at

Table 24

Guide for Researcher's Observations of Target Behaviors Short, Intermediate, and Long Term Post Intervention/Training Results Comparison of P 1, P 2, P 3

Research Participant	Pre I/T Avg.	Short Term 3-Day Avg.	% Increase to Day 1,3,5	Interm. Term; Day 30	% Increase to Day 30	Long Term; Day 60	% Increase to Day 60
P 1	2.16	5.7	239	9	416	12	555
P 2	1.25	3.0	240	10	800	9	720
P 3	1.44	7.7	534	12	833	17	1180
Average	1.61	5.5	338	10.3	683	12.7	818

day 60. Participant 3 had the greatest increase --1180% at day 60. It appears participant 2 had a slight decrease in total observed target behaviors, from 10 at day 30 to 9 at day 60.

60-Day Post Intervention/Training LTSI General and Specific

LTSI – Training in General Scales. Tables 24 through 28 reflect the individual item scores and the scale scores for the three research participants regarding Training in General, which was administered sixty days after the intervention/training was received.

Table 25 shows that the scale score average (4.2) of the three participants did not change. However, on item 69 (Training usually helps me increase my productivity), participant 1 showed a one point reduction in score, while participant 2 showed a one-point increase in score. Scores for participant 3 did not change.

The fact that the scale score did not change is on the whole significant because the scale score average for Transfer Effort – Performance Expectations (Expectation that effort devoted to transferring learning will lead to changes in job performance) was high to begin with and did not decrease as a result of the intervention/training.

Table 25

Item Ratings and Scale Scores for the LTSI Training in General Scale: Transfer Effort – Performance Expectations at 60 Days(Long Term)

Item	Item #	P1	P2	P3	Average
Learning new things improves job performance	65	3	4	5	4.0
When I work at learning I do my job better	66	4	4	5	4.3
Training helps me increase my productivity	69	3	5	5	4.7
The more training I apply, the better I do my job	71	3	4	5	4.0
Item Totals		13	17	20	
Scale Score – Day 60		3.3	4.3	5.0	4.2
Scale Score at Baseline		3.5	4.0	5.0	4.2

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Table 26 shows that the scale score average of the three participants increased from (3.5 to 3.9). On item 64 (The organization does not really value my performance), scores for participants 1 and 2 increased by one point each, while participant 3 showed an increase of two points. On item 67 (For the most part, the people who get rewarded around here are the ones that do something to deserve it), scores for both participants 1 and 2 increased by one point. Participant 2 did not change.

Performance – Outcomes Expectations (Expectation that changes in job performance will lead to valued outcomes) showed a modest increase (.4 points). This suggests the research participants' perceptions about training in general regarding the notion that improved performance leads to good things happening in previous training situations reflected a positive change in attitude after having received the intervention/training.

Table 26

Item Ratings and Scale Scores for the LTSI Training in General Scale: Performance – Outcomes Expectations at 60 Days (Long Term)

Item	Item #	P1	P2	P3	Average
The org. does not value my performance	64*	5	4	5	4.3
Those who work get rewarded	67	5	4	3	3.7
Good things happen when performance improves	68	4	4	4	4.0
People notice when you do something well	70	4	4	4	4.0
This is the ideal job for high performer rewards	72	3	4	2	3.0
Item Totals		21	20	18	
Scale Score – Day 60		4.2	4.0	3.6	3.9
Scale Score at Baseline		3.8	3.8	3.0	3.5

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.
* Negatively worded item recoded to make it positive and give it equal weight with all other scale items.

Table 27 shows that the scale score average of the three participants decreased from (4.4 to 4.1). On item 73 (People in my group generally prefer to use existing methods, rather than try new methods learned in training), there was a decrease in scores of two and one points respectively, for participants 1 and 3. This in and of itself is not necessarily a bad thing because item 73 is a negatively worded item signifying that a lower score might be better, since it implies that the participants felt more positive about people in their group being open to change. Likewise, the same is true of items 76 and 77.

On item 75 (People in my group are open to changing the way they do things), participant 2 showed an increase of one point, while participant 3 showed a decrease of one point. On item 76 (People in my group are not willing to put in the effort to change the way things are done), participant 1 showed an increase of one point, while participant 3 showed a decrease of one point. On items 77 (My workgroup is reluctant to try new

ways of doing things) and 78 (My workgroup is open to change if it will improve our job performance), the score for participant 3 decreased by one point.

Resistance – Openness to Change (Extent to which prevailing group norms are perceived by individuals to resist or discourage the use of skills and knowledge acquired in training) showed a modest decrease (.3 points). This suggests the research participants' perceptions about training in general regarding the notion that there was resistance to change in previous training situations reflected a negative or less positive change in attitude after having received the intervention/training, reflective of a lower scale score.

Table 27

Item Ratings and Scale Scores for the LTSI Training in General Scale: Resistance/Openness to Change at 60 Days(Long Term)

Item	Item #	P1	P2	P3	Average
Status quo is preferred to trying new methods	73*	2	4	4	4.0
New techniques are ridiculed by others	74*	5	4	5	4.7
Group members are open to change	75	4	5	4	4.3
Group members are not willing to change	76*	5	4	4	4.0
Team is reluctant to try new things	77*	4	4	4	4.0
Team is open to change, to improve performance	78	4	4	4	4.0
Item Totals		24	25	25	
Scale Score – Day 60		4.0	4.2	4.2	4.1
Scale Score at Baseline		4.2	4.0	5.0	4.4

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.
* Negatively worded item recoded to make it positive and give it equal weight with all other scale items.

Table 28 shows that the scale score average of the three participants increased from (4.1 to 4.3). On item 82 (I am confident in my ability to use new skills at work), participant 2 showed an increase of one point. On item 83 (I never doubt my ability to use newly learned skills on the job), participant 1 showed an increase of two points. On item

84 (I am sure I can overcome obstacles on the job that hinder my use of new skills or knowledge), participant 1 showed a decrease of one point, while participant 2 showed an increase of one point. Participant 3 did not change.

Performance Self-Efficacy (The individuals' general belief that they are able to change their performance when they want) showed the smallest increase in the Training in General category (.2 points). This suggests the research participants' perceptions about training in general regarding their confidence and ability to use newly learned skills on the job in previous training situations, reflected essentially, the same positive attitude as formerly indicated.

Table 28

Item Ratings and Scale Scores for the LTSI Training in General Scale: Performance – Self-Efficacy at 60 Days (Long Term)

Item	Item #	P1	P2	P3	Average
I'm confident I can use new skills at work	82	4	5	5	4.7
I never doubt my ability to use new skills	83	4	4	5	3.7
I overcome obstacles that hinder using new skills	84	3	4	4	4.0
I'm confident in using what I learned	85	4	4	5	4.3
Item Totals		15	17	19	
Scale Score – Day 60		3.8	4.3	4.8	4.3
Scale Score at Baseline		3.5	3.8	5.0	4.1

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Table 29 shows that the scale score average of the three participants increased from (2.9 to 3.6). On item 79 (After training, I get feedback from people on how well I am applying what I learn), participant 2 showed an increase of two points. On item 86 (People often tell me things to help me improve my job performance), participant 1

showed a decrease of one point, while participants 2 and 3 both showed increases of two points. On item 87 (When I try new things I have learned, I know who will help me), participant 1 showed a decrease of one point, while participant 2 showed an increase of two points. On item 89 (I regularly have conversations with people about how to improve my performance), participants 2 and 3 both showed an increase of one point. On item 89 (I regularly have conversations with people about how to improve my performance), participants 1 and 2 both showed increases of two points.

Even though participant 1's score decreased in two out the four items, Feedback/Performance Coaching (Formal and informal indicators from an organization about an individual's job performance) showed the greatest increase (.7 points), out of all the Training in General Scales. This suggests that the research participants' perceptions about training in general regarding feedback and or coaching in previous training situations reflected a very positive change in attitude after having received the intervention/training, but are still only somewhat above neutral.

Table 29

Item Ratings and Scale Scores for the LTSI Training in General Scale: Feedback/Performance Coaching at 60 Days (Long Term)

Item	Item #	P1	P2	P3	Average
After training, I get feedback from people	79	2	4	4	3.3
People tell me things to help me improve	86	3	4	4	4.0
I know who will help me when I try new things	87	4	5	4	4.7
I talk with people to improve my performance	89	3	4	2	3.0
Item Totals		12	17	14	
Scale Score – Day 60		3.0	4.3	3.5	3.6
Scale Score at Baseline		3.5	2.5	2.8	2.9

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

LTSI – Specific training program scales. Tables 29 through 40 reflect the individual item scores and the scale scores for the three research participants regarding the LTSI Specific Training Program Scales, which was again administered sixty days after the intervention/training was received.

Table 30 shows that the scale score average of the three participants decreased from (4.1 to 3.2). On item 1 (Prior to the training, I knew how the program was supposed to affect my performance), participants 1 and 3 showed decreases of one and two points respectively. On item 9 (Before the training, I had a good understanding of how it would fit my job-related development), participant 1 showed a decrease of three points and participant three showed a decrease of two points. On item 10 (I knew what to expect from the training before it began), participants 1 and 3 both showed a decrease of two points. On item 13 (The expected outcomes of this training were clear at the beginning of the training), participant 1 showed a decrease of one point, while participants 2 and 3 both showed increases of one point.

Table 30

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Learner Readiness at 60 Days (Long Term)

Item	Item #	P1	P2	P3	Average
Before training, I knew how I would be affected	1	4	4	2	3.3
Before training, I knew how it would fit my job	9	2	3	2	2.3
Before training, I knew what to expect	10	3	3	2	2.7
Training outcomes were clear at the beginning	13	4	4	5	4.3
Item Totals		13	14	11	
Scale Score – Day 60		3.3	3.5	2.8	3.2
Scale Score right after training (Short Term)		5.0	3.3	4.0	4.1

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Learner Readiness (Extent to which individuals are prepared to enter and participate in training) showed the greatest decrease (.9 points), out of all the Specific Training Program Scales. The previous scale score (4.1) indicated that the research participants believed they had a good understanding of how the training might fit into their job-related development. However, after the training, it appears that what they might have thought was not congruent with what actually occurred during the intervention/training.

This in and of itself is neither good nor bad. One possible explanation, based on the other high scale scores, is that they may have simply jumped to conclusions about the direction of the training, without having enough knowledge or facts, as to its actual purpose. What is surprising is that the previous scale score was as high as it was, considering that the research participants were asked to refrain from inquiring about the training before receiving it. Under normal conditions, however, training recipients would be apprised in advance of the merits of the training they would be receiving, in which case higher scores on this scale would be expected.

Table 31 shows that the scale score average of the three participants increased from (4.2 to 4.4). On item 3 (When I leave training, I can't wait to get back to work to try what I learned), participant 1 showed a decrease of one point, while participant 3 showed an increase of one point. On item 4 (I believe the training will help me do my current job better), participants 1 and 2 both showed increases of one point.

Motivation to Transfer (Direction, intensity, and persistence of effort toward using in a work setting skills and knowledge learned) showed an increase (.2 points). Again, although this is not a significant increase, it is still not surprising because one

would expect individuals who volunteer for training, to get excited or at the very least be highly interested about trying to apply what they learn during training, to their jobs.

Table 31

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Motivation to Transfer at 60 Days (Long Term)

Item	Item #	P1	P2	P3	Average
Training will increase personal productivity	2	4	5	5	4.7
I can't wait to get back to try what I learned	3	2	4	5	3.7
I believe training will help me do my job better	4	4	5	5	4.7
I get excited thinking about trying what I learned	5	3	5	5	4.3
Item Totals		13	19	20	
Scale Score – Day 60		3.3	4.8	5.0	4.4
Scale Score right after training (Short Term)		3.3	4.5	4.8	4.2

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Table 32 shows that the scale score average of the three participants increased from (2.8 to 3.2). On item 6 (If I successfully use my training, I will receive a salary increase) and 16 (Employees in this organization receive various 'perks' when they utilize newly learned skills on the job), participants 1 and 3 both showed increases of one point. On item 17 (If I do not use my training I am unlikely to get a raise), participant 3 showed an increase of two points. Participant 2 did not change.

Personal Outcomes/Positive (Degree to which applying training on the job leads to outcomes that are positive for the individual) showed a modest increase (.4 points), although this only brought the scale score up to about neutral. This suggests that the research participants are not committed to the idea that their organization will reward them with some type of "perks" when they use their newly learned skills on the job.

Table 32

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Personal Outcomes/Positive at 60 Days (Long Term)

Item	Item #	P1	P2	P3	Average
Successfully using training will increase salary	6	2	3	4	3.0
Perks are received for using newly learned skills	16	2	3	3	2.7
If I do not use my training, I will not get a raise	17*	5	3	4	4.0
Item Totals		9	9	11	
Scale Score – Day 60		3.0	3.0	3.7	3.2
Scale Score right after training (Short Term)		2.7	3.0	2.7	2.8

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree. *Negatively worded item recoded to make it positive and give it equal weight with all other scale items.

Table 33 shows that the scale score average of the three participants increased (in this case, got more negative) from (1.8 to 2.2). On item 14 (Employees in this organization are penalized for not using what they have learned in training), participants 1 and 3 both showed increases of one point, while participant 2 showed a decrease of one point. On item 21 (If I do not use new techniques taught in training I will be reprimanded), participant 2 showed an increase of one point. On items 23 (If I do not utilize my training I will be cautioned about it) and 24 (When employees in this organization do not use their training it gets noticed), participant 1 showed an increase of one point on each item.

Personal Outcomes/Negative (Extent to which individuals believe that not applying skills and knowledge learned in training will lead to negative personal outcomes) showed an increase (.4 points). This is very interesting because it suggests that the research participants believe more strongly than previously, that if they do not use

their training they will be cautioned about it or penalized. Of course, this tends to add more commitment to using newly acquired knowledge and skills. But even though the scale score is still not high enough to make any positive claim that commitment is significantly based on this scale, participant 3 did show a high item score (4) for item 14.

Table 33

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Personal Outcomes/Negative at 60 Days (Long Term)

Item	Item #	P1	P2	P3	Average
Employees are penalized for not using new skills	14	2	2	4	2.7
I will be reprimanded for not using new skills	21	1	3	1	1.7
I will be cautioned for not using new skills	23	2	2	1	1.7
It gets noticed if new training is not used	24	2	3	3	2.7
Item Totals		7	10	9	
Scale Score – Day 60		1.8	2.5	2.3	2.2
Scale Score right after training (Short Term)		1.0	2.5	2.0	1.8

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Table 34, Personal Capacity for Transfer (Extent to which individuals have the time, energy, and mental space in their work lives to make changes required to transfer learning to the job), shows that the scale score average (3.8) of the three participants did not change. This suggests that nothing of any significance in the research participants' daily work schedules changed since the intervention/training, to alter their perceptions about applying their newly acquired knowledge and skills.

Table 34

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Personal Capacity for Transfer at 60 Days (Long Term)

Item	Item #	P1	P2	P3	Average
My workload allows me time to try new things	19	2	4	3	3.0
I have time in my schedule to try new things	25	3	4	4	3.7
My priorities must change before I use training	26*	4	4	3	4.3
I wish I had time to do things the right way	27*	4	4	4	4.0
Item Totals		13	16	16	
Scale Score – Day 60		3.3	4.0	4.0	3.8
Scale Score right after training (Short Term)		3.0	4.0	4.3	3.8

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree. * Negatively worded item recoded to make it positive and give it equal weight with all other scale items.

Table 35 shows that the scale score average of the three participants increased from (3.2 to 3.5). On items 28 (My colleagues appreciate my using new skills I have learned in training) and 29 (My colleagues encourage me to use the skills I have learned in training), participant 3 showed an increase of one point on each item. On item 31 (My colleagues are patient with me when I try out new skills or techniques at work), participants 1 and 3 both showed increases of one point.

Peer Support (Extent to which peers reinforce and support use of learning on the job) showed an increase (.3 points). Although this is a positive gain, it still remains in the neutral range.

Table 35

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Peer Support at 60 Days (Long Term)

Item	Item #	P1	P2	P3	Average
My peers appreciate it when I use my new skills	28	2	4	4	3.3
My peers encourage me to use my new skills	29	2	4	4	3.3
My peers expect me to use what I learn	30	2	4	4	3.3
My peers are patient when I try out new things	31	4	4	4	4.0
Item Totals		10	16	16	
Scale Score – Day 60		2.5	4.0	4.0	3.5
Scale Score right after training (Short Term)		2.3	4.0	3.3	3.2

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Table 36 shows that the scale score average of the three participants increased from (2.4 to 2.7). On items 32 (My supervisor meets with me regularly to work on problems I may be having in trying to use my training), 33 (My supervisor meets with me to discuss ways to apply training on the job), and 37 (My supervisor shows interest in what I learn in training), participants 1 and 3 both showed increases of one point on each of the items. On item 39 (My supervisor sets goals for me that encourage me to apply my training on the job), participant one showed an increase of one point. On item 40 (My supervisor lets me know I am doing a good job when I use my training), participant 3 showed an increase of one point. Participant 2 did not change.

Supervisor/Manager Support (Extent to which supervisors and managers support and reinforce use of training on the job) showed an increase (.3 points) but still indicates that the research participants do not think that their supervisors/managers feel strongly

enough about their training to actually set goals for them, which will give them encouragement to apply the training to the job.

Table 36

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Supervisor/Manager Support at 60 Days (Long Term)

Item	Item #	P1	P2	P3	Average
My boss helps me work out training problems	32	2	3	2	2.3
My boss discusses with me how to apply training	33	2	3	2	2.3
My boss shows interest in what I learned	37	4	4	4	4.0
My boss sets goals to encourage me to use train.	39	3	3	2	2.7
My boss lets me know I'm doing a good job	40	2	3	2	2.3
My boss sets realistic goals to use my training	43	3	3	2	2.7
Item Totals		16	19	14	
Scale Score – Day 60		2.7	3.2	2.3	2.7
Scale Score right after training (Short Term)		2.0	3.2	2.0	2.4

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Table 37 shows that the scale score average of the three participants increased from (1.9 to 2.0). On item 38 (My supervisor opposes the use of the techniques I learned in training), participant 2 showed an increase of two points. On item 44 (My supervisor would use different techniques than those I would be using if I use my training), participant 1 showed a decrease of one point, while participant 3 showed an increase of one point.

Supervisor/Manager Sanctions (Extent to which individuals perceive negative responses from their supervisors and managers when applying skills learned in training) showed an increase of only (.1 point). However, this is a negative scale item, which means that a high scale score on this scale would indicate that supervisors are actively

opposing that transfer of learning. Therefore, the (.1 point) gain is not very encouraging, but the scale score remains relatively low.

Table 37

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Supervisor/Manager Sanctions at 60 Days (Long Term)

Item	Item #	P1	P2	P3	Average
My boss opposes the use of my new training	38**	1	3	1	1.7
My boss uses different skills, than those I learned	44**	2	3	3	2.7
My boss thinks I'm ineffective with new training	45**	1	3	1	1.7
Item Totals		4	9	5	
Scale Score – Day 60		1.3	3.0	1.7	2.0
Scale Score right after training (Short Term)		2.0	2.3	1.3	1.9

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree. ** Negative scale item. High scale score on this scale would indicate that supervisors are actively opposing that transfer of learning.

Table 38, Perceived Content Validity (Extent to which trainees judge training content to reflect job requirements accurately), shows that the scale score average (3.9) of the three participants did not change. This suggests that the research participants still feel fairly confident that what they learned in training continues to match their job requirements.

Table 39 shows that the scale score average of the three participants increased from (4.3 to 4.5). On item 52 (The activities and exercises the trainers used helped me know how to apply my learning on the job), participants 1 and 3 both showed increases of one point. On items 53 (It is clear to me that the people conducting the training understand how I will use what I learn), 54 (The trainer(s) used lots of examples that

Table 38

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Perceived Content Validity at 60 Days (Long Term)

Item	Item #	P1	P2	P3	Average
Training aids are similar to what I use on the job	47	3	4	4	3.7
Training methods are similar to I use on the job	48	4	4	4	4.0
I like how training seems so much like my job	49	4	4	4	4.0
Training instruction matches my job requirements	58	4	4	3	3.7
Training situations closely match those of my job	59	3	4	5	4.0
Item Totals		18	20	20	
Scale Score – Day 60		3.6	4.0	4.0	3.9
Scale Score right after training (Short Term)		3.8	3.6	4.4	3.9

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

showed me how I could use my learning on the job), and 55 (The way the trainer(s) taught the material made me feel more confident I could apply it), participant 2 showed an increase of one point on each.

Transfer Design (Degree to which training has been designed and delivered to give trainees the ability to transfer learning to the job, and training instructions match job requirements) showed an increase (.2 points). This is not a significant increase but from a trainers perspective it is good because it suggests that the research participants felt that the activities and exercises used during the training helped them to know how to apply their learning to their jobs.

Table 39

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Transfer Design at 60 Days (Long Term)

Item	Item #	P1	P2	P3	Average
Training activities help me apply the learning	52	4	4	4	4.0
The trainers know how I will use what I learn	53	4	5	5	4.7
The trainers used examples to help me use skills	54	4	5	5	4.7
The trainers made me feel confident w/new skills	55	4	5	5	4.7
Item Totals		16	19	19	
Scale Score – Day 60		4.0	4.8	4.8	4.5
Scale Score right after training (Short Term)		3.8	4.0	5.0	4.3

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree.

Table 40 shows that the scale score average of the three participants decreased from (4.2 to 4.1). On item 63 (It will be hard to get materials and supplies I need to use the skills and knowledge learned in training), participant 1 showed a decrease of one point. Participants 2 and 3 did not change.

Opportunity to Use Learning (Extent to which trainees are provided with or obtain resources and tasks on the job enabling them to use training on the job) showed a small decrease (.1 point) attributed only to participant 1. Although a non-significant increase, the relatively high scale score suggests that the participants continue to perceive that the resources they need to be able to use what they learned during their intervention/training will be available to them after their training.

Table 40

Item Ratings and Scale Scores for the LTSI Specific Training Program Scale: Opportunity to Use Learning *at 60 Days (Long Term)*

Item	Item #	P1	P2	P3	Average
I have the resources needed to use what I learned	59	4	4	5	4.3
There are enough available human resources	60	3	4	4	3.7
Budget limitations prevent me from using training	61*	4	4	4	4.0
It's hard to get materials & supplies to use skills	63*	4	4	5	4.3
Item Totals		15	16	18	
Scale Score – Day 60		3.8	4.0	4.5	4.1
Scale Score right after training (Short Term)		4.0	4.0	4.5	4.2

Note. Ratings are on a five point scale from 1 = strongly disagree to 5 = strongly agree. *Negatively worded item recoded to make it positive and give it equal weight with all other scale items.

Summary of LTSI Responses

Table 41 is a summary comparison of the five factors affecting the long term and pre intervention scale scores of the Training in General scales, and the eleven factors affecting the long term and short term scales scores of the Specific Training Program scales.

When examining the Training in General Scales, the long term scale scores versus the pre intervention scale scores show a substantial (.4 or more) increase in 2 out of the 5 scales, while the rest remain essentially unchanged.

Within the Specific Training Program Scales, the long term scale scores versus the short term scale scores show a substantial (.4 or more) increase in 2 out of the 11 scales, a decrease in 1 scale, while the rest remain equal. Most of the LTSI general and

specific scale scores were relatively high at the beginning of the study and remained high at the end.

Table 41

Summary of General and Specific Scale Scores

LTSI	Long Term Scale Scores		Pre Intervention Scale Scores
Training in General Scales			
Transfer Effort – Performance Expectations	4.2	=	4.2
Performance – Outcomes Expectations	3.9	>	3.5
Resistance – Openness to Change	4.1	=	4.4
Performance Self-Efficacy	4.3	=	4.1
Feedback/Performance Coaching	3.6	>	2.9
Specific Training Program Scales			*Short Term Scale Scores*
Learner Readiness	3.2	<	4.1
Motivation to Transfer	4.4	=	4.2
Personal Outcomes/Positive	3.2	>	2.8
Personal Outcomes/Negative	2.2	>	1.8
Personal Capacity for Transfer	3.8	=	3.8
Peer Support	3.5	=	3.2
Supervisor/Manager Support	2.7	=	2.4
Supervisor/Manager Sanctions	2.0**	=	1.9**
Perceived Content Validity	3.9	=	3.9
Transfer Design	4.5	=	4.3
Opportunity to Use Learning	4.1	=	4.2

Note: A difference of .4 or more between the Long and Short Term scale scores is noted as being a substantial increase (>) or decrease (<). A difference of 0 or .3 is noted as being equal (=).
** Negative scale item. High scale score on this scale would indicate that supervisors are actively opposing that transfer of learning.

Summary of Behavioral Scores

The results of the short, intermediate, and long term intervention effects indicated learning transfer had occurred with all three participants. The Guide to Researcher's Observations of Target Behaviors revealed increases ranging from 239 to 534 percent for

the short term post intervention period, 416 to 833 percent for the intermediate term post intervention period, and 555 to 1180 for the long term post intervention period.

Overall, the results indicate that, as proposed in the research hypothesis, the intervention based on the Contextual Problem Solving Training Model positively affected learning transfer in manager-leaders in the short, intermediate, and long term.

CHAPTER 5: DISCUSSION

This chapter consists of a review of the entire study particularly findings, interpretation of the data, conclusions drawn from the information, implications and more importantly, recommendations for practice/application.

Summary of the Literature and Method

In today's business environment, the philosophy driving corporate leadership is based on providing for the overall good of the follower, and has been elevated from its "not so humble beginnings" of direction and control to a more noble appreciation that attempts to provide for the common good. Terms such as *servant-leader,* Greenleaf (1977), *servant- exemplar,* Bogue, (1994), *leader-as-steward,* DePree (1989), have heralded a new era of leadership. Moreover, power rests in the hands of those individuals who are most central to solving an organization's crucial problems and ensuring the company's long-term viability (Kouzes & Posner, 2002).

Leadership and problem solving are inexorably linked and for that reason this study has looked at leadership from an organizational/business context and used it as a platform to identify ethical and practical management behaviors, in order to strengthen manager-leaders' skills and job performance. In this regard, problem solving came to light as the primary leadership characteristic that was used to reinforce manager-leaders' capacities to lead, and became the initiative with which to test the validity and viability of the learning transfer process, within a corporate environment.

Much of what is currently known and applied in the area of learning transfer evolved from the field of social learning and social cognitive theory, which was directly attributed to the noted 20th Century behavioral psychologist Albert Bandura. Social learning – acquiring behaviors by observing and imitating others within a social context (Kreitner & Luthans, 2001) is the basis upon which (Burke & Baldwin, 1999; Baldwin & Ford, 1988; Latham & Saari, 1979; Goldstein & Sorcher, 1974) and other learning transfer researchers constructed their learning transfer models.

The underlying purpose of learning transfer is to affect training, in order to change behavior. Goldstein and Sorcher's (1974) model had to do with bringing about change in on-the-job behaviors, to which end they developed the concept of "Applied Learning" – the basis for the process of modeling, role-playing, reinforcement, and transfer training, and the chief goal of the model; i.e., to insure the transfer of training (learning transfer) to the job. Baldwin and Ford (1988) followed suit and continued to improve upon the works of their predecessors. They incorporated several elements of Goldstein and Sorcher's (1974) model and included new aspects of learning transfer in their model of the transfer process, the most noted being conditions of transfer. Eventually, Holton and Baldwin (2000) refined Baldwin and Ford's model and developed "The Conceptual Framework for Managing Learning Transfer Systems," which provided a more intervention-oriented approach to how organizational systems could be changed to enhance learning transfer.

The method used in this study to examine the learning transfer process was a quasi-experimental, multiple baseline across subjects design. Since the study was about the behavior of single individuals, this particular design was chosen because of its

usefulness in research involving social learning theories and human behavior. The purpose of the design was to ascertain to what extent knowledge and skills acquired by manager-leaders during a leadership skills development program in *Contextual Problem Solving* had been successfully transferred to the job environment. The content goal of the Contextual Problem Solving Training Model was to organize and display problems to participants in ways that would enhance their mental representations and engage them in appropriate problem solving processes, in order to increase their performance levels and fulfill their career goals.

Two data collection methods were used to assess learning transfer. First, because this study was predicated on affecting behavioral changes, pre-and-post-intervention target behaviors were observed and recorded by using the Guide for Researcher's Observations of Target Behaviors (GROTB), to visually observe each participant while engaged in his/her daily activities. Second, the Learning Transfer System Inventory (LTSI) was used to evaluate the participants' general perceptions regarding prior training programs, as well as their perceptions about the Contextual Problem Solving workshop. In combination, both instruments were able to successfully measure the degree to which learning transfer had occurred.

Summary of Findings

The study found, as hypothesized, that learning transfer had occurred for all three participants not only in the short but also in the intermediate and long term phases. The GROTB showed substantial gains were made with regard to how much learning transfer occurred after the research participants had received the intervention/training.

Observation results for days 1, 3, 5, 30, and 60, for the three participants showed large increases in their performance compared to their baselines. The combined average increases for all three participants were 338% for the average of the 1, 3, and 5 day period, 683% at day 30, and 818% at day 60; an indication that learning transfer had occurred and lasted at least 60 days.

Positive results were also revealed with the Learning Transfer System Inventory. As proposed in the hypothesis, the LTSI Specific scale scores were relatively high at the beginning of the study and remained high at 60 days, in the majority of the scales. Out of a total of 16 scales, only one (Learner Readiness) showed substantial decrease. The results of the LTSI indicated participants rated most aspects of learning transfer positively, i.e., Motivation to Transfer, Perceived Content Validity, Transfer Design, and Opportunity to Use Learning all had high ratings, both immediately after the intervention and 60 days later.

Discussion of Results

The Transfer Process

The purpose of this research was to study the extent to which knowledge and skills acquired by manager-leaders during a leadership skills development program in Contextual Problem Solving, had been successfully transferred to the job environment, in which "transfer" was represented by how much learned behavior had been generalized to the job context and maintained over a period of time on the job.

Some retention of what is learned during most training is common during the first few days following the training. The real test, however, in determining how much if any, of the knowledge and skills acquired by a trainee transfers to the job, is whether or not

the trainee can "generalize" the training to the job context and also, the degree to which the trainee is applying what was learned, long after the training has ended. Generalization refers to the extent to which trained skills and behaviors are exhibited in the transfer setting. Maintenance concerns the length of time that trained skills and behaviors continue to be used on the job (Baldwin & Ford, 1988).

Generalization – Application of training. The GROTB results revealed that the research participants used what they learned from the Contextual Problem Solving workshop. Participants expressly honed in on various aspects of contextual problem solving related to a difficult situation being experienced by each at the time. The findings indicated considerable increases, for all participants, in the utilization of newly acquired problem solving applications, as well as changes in behavior intended to maintain ongoing appreciation and usage of the training. The results were the intended consequence brought about by using an approach to training based on Goldstein and Sorcher's (1974) pronouncement of providing training, in order to change behavior.

Vital to the success of the transfer process were the implementation of the two fundamentals – identical elements and general principles, identified in literature as classical approaches to training (Baldwin & Ford, 1988; Goldstein & Ford, 2002; Laker, 1990; Leifer & Newstrom, 1980). By allowing the research participants to work exclusively with situations that related specifically to their jobs, without focusing on similarly juxtaposed examples derived from other organizations, greater probability of transfer was insured. The participants were able to directly link their training to their individual job processes and needs.

Of equal importance was using the concept of general principles, based on providing trainees with general rules and theoretical principles, so that what was learned, not only could be satisfactorily demonstrated during the training, but also "contextually" applied to the job (Baldwin & Ford, 1988; Goldstein & Sorcher, 1974). This aspect of the training was built into the Contextual Problem Solving Training Model, in order to provide both theory and content, so that problem-solving skills could be successfully transferred to the job and used constructively in different job-related situations.

Furthermore, because the nature of the training was complex and not merely "task-driven," generalization took on even more importance. As stated by Baldwin and Ford (1988), "...the ultimate goal in complex skill-modeling training is to teach the trainee one or more principles (not strictly a list of behaviors) that will allow him/her to learn, generalize, and apply behaviors different form those modeled" (p. 90). This was borne out by the fact that the Specific Training Program Scales construct – Transfer Design scale score, was (4.5). Remember that Transfer Design is described, as the degree to which training has been designed and delivered to give trainees the ability to transfer learning to the job, and training instructions match job requirements. Stated differently, the activities and exercises the trainer used during the intervention/training helped the research participants know how to apply what they learned to the job.

Supervisor Support and Opportunity to Use Learning

The importance of work environment characteristics cannot be overstated. Huczynski and Lewis (1980) found that transfer attempts were more likely to be successful and beneficial when the supervisor sponsored "new ideas." Their research suggests that supported innovation attempts, especially those supported by the immediate

supervisor, have a much higher chance of implementation success. Studies conducted by Tannenbaum and Lewis (1992) also indicate that supervisory support is a key environmental factor that can affect learning transfer.

Nonetheless, the research participants' scale scores were relatively low with regard to supervisor involvement (2.7) on the Specific Program Training Scales – supervisor/Manager Support, at the 60-day period. This does not mean that there was no supervisor support, however, the participant's supervisors did not formally discuss the content and benefits of the training program and set goals prior and subsequent to attendance in the program, as recommended by (Wexley & Baldwin, 1986). Broad and Newstrom (1992) also propose a "Transfer Partnership" where managers, trainers, and trainees come together to develop strategies that can be used to support eventual transfer.

Although these types of strategies were not implemented, supervisors were observed giving their support and sponsorship commitment by personally communicating their enthusiasm and backing of the training initiative. The supervisors were unequivocal in their support, and the research participants were aware of this. This was bolstered somewhat by the participants' belief that the resources required to use what they learned during their training, would be available to them after the training. On the Specific Training Program Scales – Opportunity to Use Learning, the long term scale score was 4.1.

The Training Model

The Contextual Problem Solving Training Model was the foundation, upon which learning transfer was facilitated. The model was designed, not only to facilitate training

principles but also, to assist in the learning transfer process, in accordance with the principles of social learning theory and performance outcomes.

One factor that contributed to increasing the chances for successful learning transfer, and which is not always part of the corporate training scenario, was that the research participants volunteered for the study, illuminating their interest and intent to integrate successful behavioral changes into their job. Generally, individuals who volunteer for training have a vested interest in the outcome. Burke and Baldwin (1999) touch upon this very critical aspect of corporate training, mainly that the first stage of behavioral change requires the person to be "ready" to modify habitual patterns. Also, the fact that feedback and performance coaching were a major aspect of the training design, only bolstered the participant's potential for successful performance outcomes.

Work Environment and Trainer Coaching

Often times, corporate training is conducted at off-site facilities. However, to maximize learning transfer the intervention should be conducted *onsite* (the environment in which the participants conduct their daily work activities). The literature is replete with research that supports the use of identical elements, which presumes a greater probability of transfer when a higher percentage of characteristics (identical elements) exists both in the training and application settings (Thorndike & Woodworth, 1901).

In furtherance of this ideal, trainer coaching was also provided on-site, in order to promote ongoing interest and immediate feedback, strengthen what had been learned during the training, and support the concept of identical elements. This aspect of the model dovetailed with Opportunity to Use Learning and was an enhancement of

maintenance of behavior, which concerned the length of time that trained skills and behaviors would continue to be used on the job (Baldwin & Ford, 1988).

Using one-on-one executive coaching proved to be one of the most vital components in promoting learning transfer. In a study conducted by Olivero, Bane, and Kopelman (1997) the researchers found that when training was augmented by coaching, there was a considerable increase in trainee productivity. In their conclusion, they reported that the research demonstrated dramatic effects of one-on-one executive coaching as a transfer of training tool. The coaching allowed this researcher to work with each research participant on his/her individual work related problem/s (i.e., identical elements) and provide immediate feedback, and to help them directly use their newly acquired knowledge and skills. The short term versus the long term scale scores showed a large increase (2.9 to 3.6) respectively, in the Training in General Scales -- Feedback/Performance Coaching.

The drawback, though, with one-on-on-one executive coaching is that it is not always feasible, particularly when many employees within the organization must receive the same training. For one-on-on-one executive coaching to be implemented with more than just a few trainees; first, several highly trained coaches must be used; second, the supervisor/s must be willing to allow trainees to invest the time it takes to implement the coaching; and third, the sponsor/s must be willing to invest financially in what may be a very expensive proposition. Basically, the fewer the number of trainees requiring coaching, the more practical it becomes to employ. One aspect of the research design and methodology that contributed to a successful outcome was that it worked well with three

volunteers. This made one-on-one trainer-trainee involvement very practical because it allowed this researcher adequate time, to personally coach each participant

Comparison of LTSI Scores with Those from Other Private Organizations

As previously stated in Chapter 2, the researcher attempted to do a normative comparison of the research participants' LTSI scale scores. The authors of the Learning Transfer System Inventory were contacted, to inquire if any normative data had been recently published. In response, the authors indicated that no normative data per se existed, but a recently published paper compared LTSI scores across multiple public, private, and non-profit organizations.

The paper by Holton, Chen, and Naquin (2003), used a subset of 1,099 respondents, to compare transfer systems across three organization types, eight organizations, and nine types of training, in order to investigate how learning transfer systems differed across organizational settings in the United States.

Tables 42 and 43 compare Holton, Chen, and Naquin's (2003) LTSI scale scores for private organizations *only*; against those of the research participants' short and long term scale scores (Table 41) in this study and the pilot study. Note that the short term scale scores include only the Specific Training Program Scales. Moreover, it refers only to their first research question – Are there significant differences in transfer system characteristics between organizational types (profit, nonprofit, and public sector)? A comparison with research questions two and three (see Chapter 2) was not included because the questions dealt with factors that were not directly related to the scope and purpose of this study. The *private* organizations' scores have been rounded off to the

nearest tenth of a decimal point, to maintain consistency with those of the research participant and pilot study scores.

Table 42

LTSI Short Term Specific Scale Scores versus Pilot Study Scores and Holton, Chen, and Naquin (2003) Study Scores

LTSI	Pilot Study Private Sect. Scale Scores		This Study Short Term Scale Scores		HCN Study Private Sect. Scale Scores
Training Specific					
Learner Readiness	3.3	<	4.1	>	3.2
Motivation to Transfer	3.7	<	4.2	=	3.9
Personal Outcomes/Positive	3.1	=	2.8	>	2.4
Personal Outcomes/Negative	2.3	>	1.8	<	2.2
Personal Capacity for Transfer	2.9	<	3.8	>	3.3
Peer Support	3.1	=	3.2	=	3.4
Supervisor/Manager Support	2.8	>	2.4	<	2.8
Supervisor/Manager Sanctions	2.1**	=	1.9**	<	2.3**
Perceived Content Validity	3.3	<	3.9	>	3.4
Transfer Design	3.8	<	4.3	=	4.0
Opportunity to Use Learning	3.1	<	4.2	>	3.7

Note: A difference of .4 or more between the Long and Short Term scale scores is noted as being a substantial increase (>) or decrease (<). A difference of 0 or .3 is noted as being equal (=).
** Negative scale item. High scale score on this scale would indicate that supervisors are actively opposing that transfer of learning.

An examination of Table 42 reveals that Peer Support (Extent to which peers reinforce and support use of learning on the job) is equal or nearly equal to one another in all three studies. However, the following scales for the three research participants are substantially higher, than those of the pilot and Holton, Chen, and Naquin studies:

1. Learner Readiness – Extent to which individuals are prepared to enter and participate in training.

2. Personal Capacity for Transfer – Extent to which individuals have the time, energy, and mental space in their work lives to make changes required to transfer learning to the job.
3. Perceived Content Validity – Extent to which trainees judge training content to reflect job requirements accurately.
4. Opportunity to Use Learning – Extent to which trainees are provided with or obtain resources and tasks on the job enabling them to use training on the job.

Motivation to Transfer (Direction, intensity, and persistence of effort toward using in a work setting skills and knowledge learned) and Transfer Design (Degree to which training has been designed and delivered to give trainees the ability to transfer learning to the job, and training instructions match job requirements) were substantially higher than the pilot study but equal to the Holton, Chen, and Naquin study.

Personal Outcomes/Positive (Degree to which applying training on the job leads to outcomes that are positive for the individual) and Supervisor/Manager Sanctions (Extent to which individuals perceive negative responses from their supervisors and managers when applying skills learned in training) were substantially higher than the Holton, Chen, and Naquin study but nearly equal to the pilot study. Remember, Supervisor/Manager Sanctions is a negative scale item, which means a lower score is better. However, Supervisor/Manager Support (Extent to which supervisors and managers support and reinforce use of training on the job) was lower than the other two studies.

An examination of Table 43, how the long term LTSI scale scores compare to the pilot and Holton, Chen, and Naquin studies, reveals that the following five scales are equal or nearly equal to one another in all three studies:

Table 43

LTSI Long Term General and Specific Scale Scores versus Pilot Study Scores and Holton, Chen, and Naquin (2003) Study Scores

LTSI	Pilot Study Private Sec. Scale Scores		This Study Long Term Scale Scores		HCN Study Private Sect. Scale Scores
Training in General					
Transfer Effort – Perf. Expectations	3.9	=	4.2	=	4.0
Performance – Outcomes Expect.	3.5	<	3.9	>	3.4
Resistance – Openness to Change	3.3	<	4.1	>	2.6
Performance Self-Efficacy	4.0	=	4.3	>	3.8
Feedback/Performance Coaching	3.1	<	3.6	>	3.1
Training Specific					
Learner Readiness	3.3	=	3.2	=	3.2
Motivation to Transfer	3.7	<	4.4	>	3.9
Personal Outcomes/Positive	3.1	=	3.2	>	2.4
Personal Outcomes/Negative	2.3	=	2.2	=	2.2
Personal Capacity for Transfer	2.9	<	3.8	>	3.3
Peer Support	3.1	<	3.5	=	3.4
Supervisor/Manager Support	2.8	=	2.7	=	2.8
Supervisor/Manager Sanctions	2.1**	=	2.0**	=	2.3**
Perceived Content Validity	3.3	<	3.9	>	3.4
Transfer Design	3.8	<	4.5	>	4.0
Opportunity to Use Learning	3.1	<	4.1	>	3.7

Note: A difference of .4 or more between the Long and Short Term scale scores is noted as being a substantial increase (>) or decrease (<). A difference of 0 or .3 is noted as being equal (=).
** Negative scale item. High scale score on this scale would indicate that supervisors are actively opposing that transfer of learning.

Training in General Scales

1. Transfer Effort/Performance Expectations – Expectation that effort devoted to transferring learning will lead to changes in job performance.

Specific Training Program Scales

2. Learner Readiness – Extent to which individuals are prepared to enter and participate in training.
3. Personal Outcomes/Negative – Extent to which individuals believe that not applying skills and knowledge learned in training will lead to negative personal outcomes.
4. Supervisor/Manager Support – Extent to which supervisors and managers support and reinforce use of training on the job.
5. Supervisor/Manager Sanctions – Extent to which individuals perceive negative responses from their supervisors and managers when applying skills learned in training.

This seems to indicate that on 5 out of 16 scales listed above, this study and the pilot study results are aligned with Holton, Chen, and Naquin's national scale averages. The rest of the current study scale scores, however, are different from either the pilot or the Holton, Chen, and Naquin studies, or both.

However, the following 12 pilot study (half-day training/no follow-up) scale scores are essentially equal to Holton, Chen, and Naquin's national scale scores:

Training in General Scales

1. Transfer Effort – Performance Expectations
2. Performance/Outcomes Expectations – Expectation that changes in job performance will lead to valued outcomes.
3. Performance Self-Efficacy – The individuals' general belief that they are able to change their performance when they want.

4. Feedback/Performance Coaching – Formal and informal indicators from an organization about an individual's job performance.

Specific Training Program Scales

5. Learner Readiness – Extent to which individuals are prepared to enter and participate in training.
6. Motivation to Transfer – Direction, intensity, and persistence of effort toward using in a work setting skills and knowledge learned.
7. Personal Outcomes/Negative – Extent to which individuals believe that not applying skills and knowledge learned in training will lead to negative personal outcomes.
8. Peer Support – Extent to which peers reinforce and support use of learning on the job.
9. Supervisor/Manager Support – Extent to which supervisors and managers support and reinforce use of training on the job.
10. Supervisor/Manager Sanctions – Extent to which individuals perceive negative responses from their supervisors and managers when applying skills learned in training.
11. Perceived Content Validity – Extent to which trainees judge training content to reflect job requirements accurately.
12. Transfer Design – Degree to which training has been designed and delivered to give trainees the ability to transfer learning to the job, and training instructions match job requirements.

This is not unusual because in both studies, there was no follow-up intervention to the training. In the Holton, Chen, and Naquin (2003) study, "All of the data were collected immediately after the training before participants left the training class" (p. 462). The same is true of the pilot study. Therefore, it makes sense that the scores *would* be relatively the same. Essentially, of the 16 LTSI constructs, 12 constructs in both the pilot study and the Holton, Chen, and Naquin study have virtually the same scores (< .4 difference).

But a different picture emerges when comparing the results of "This" study against Holton, Chen, and Naquin's study. The following ten scales show moderate to large differences in favor of the current study:

Training in General Scales

1. Performance/Outcomes Expectations – Expectation that changes in job performance will lead to valued outcomes (3.9 vs. 3.4).
2. Resistance/Openness to Change – Extent to which prevailing group norms are perceived by individuals to resist or discourage the use of skills and knowledge acquired in training (4.1 vs. 2.6).
3. Performance Self-Efficacy – The individuals' general belief that they are able to change their performance when they want (4.3 vs. 3.8).
4. Feedback/Performance Coaching – Formal and informal indicators from an organization about an individual's job performance (3.6 vs. 3.1).

Specific Training Program Scales

5. Motivation to Transfer – Direction, intensity, and persistence of effort toward using in a work setting skills and knowledge learned (4.4 vs. 3.9).

6. Personal Outcomes/Positive – Degree to which applying training on the job leads to outcomes that are positive for the individual (3.2 vs. 2.4).
7. Personal Capacity for Transfer – Extent to which individuals have the time, energy, and mental space in their work lives to make changes required to transfer learning to the job (3.8 vs. 3.3).
8. Perceived Content Validity – Extent to which trainees judge training content to reflect job requirements accurately (3.9 vs. 3.4).
9. Transfer Design – Degree to which training has been designed and delivered to give trainees the ability to transfer learning to the job, and training instructions match job requirements (4.5 vs. 4.0).
10. Opportunity to Use Learning – Extent to which trainees are provided with or obtain resources and tasks on the job enabling them to use training on the job (4.1 vs. 3.7).

So, 10 out of 16 scales in this study were better, and none were worse ($\geq$.4).

These differences may be attributed to the learning transfer that occurred, which resulted from the blueprint of this study. As previously indicated in Chapter 1, the primary goal of this study was to modify and adapt an existing behavior change model/process and use it to enhance a specific leadership quality within participants, so that the learning that took place could then be applied (transferred) successfully to the job environment. Of course, there were certain a priori considerations that were critical in designing this model.

One such consideration included the two dimensions of "The Learning Event" (content and design) developed by Holton and Baldwin (2000). The idea is that the learning event (actual training) must be built around content that is viewed as valid and complete to attain job performance outcomes and that the content must be taught in a manner that enables learners to use it in real work situations, which is called "transfer design." The scale score for the Transfer Design construct (Specific Training Program Scales) at the 60-day period was (4.5), compared to (4.0) in the Holton, Chen, and Naquin study, and (3.8) in the pilot study. This indicates that the Contextual Problem Solving Training Model was very effective in accomplishing the specific goal of learning transfer. Additionally, the scale score for the Perceived Content Validity construct (Specific Training Program Scales) at the 60-day period was (3.9), compared to (3.4) in the Holton, Chen, and Naquin study, and (3.3) in the pilot study. Once again this illustrates the positive effects of learning transfer.

Another essential element that greatly impacted performance outcomes in this study was motivation. Gregoire, Propp, and Poetner (1998) make a good case for the importance of motivation and refer to it as a critical interactive component that can affect the attitudes of trainees in the pre-training environment, training environment, and post-training environment. They aptly suggest that it is unlikely that transfer will occur if motivation is lost at any point in the training environment. Probably, one of the main reasons that the rates for learning transfer are so dismal, often as little as 10 % according to Naquin and Baldwin (2003), is because motivation has not been actively managed, to decrease the probability of failure.

Motivation is about becoming excited over the prospect of applying new skills or techniques acquired during training. It stands to reason that manager-leaders who benefit the most are those who intend to use what they learn, and thus willingly sign-up and eagerly participate in the training. During this study, self-motivation was evident due to the fact that the research participants voluntarily participated. The scale score for Motivation to Transfer (Specific Training Program Scales) at the 60-day period was (4.4), compared to (3.9) in the Holton, Chen, and Naquin study, and (3.7) in the pilot study.

This researcher believes that meticulous planning caused high levels of motivation amongst the research participants. One integral aspect of this planning process included removing barriers, such as lack of a follow-up plan to incorporate the new skills into the job (Kirkpatrick, 1998). The research participants were motivated prior to the intervention/training taking place because, although they were not apprised of the actual content of the training, they believed in its potential usefulness, especially since there would be follow-up coaching and training.

Another integral planning aspect involved garnering supervisory sponsorship and future commitment to insure that barriers to transfer were minimized (Baldwin & Ford, 1988). This meant that the supervisors involved in sponsoring this initiative were prepared to actively support and encourage the participants to employ what they had learned, and to prevent barriers that could have caused failure of transfer. However, while, the supervisors did sponsor and support the initiative, they did so, apparently by not actively opposing the transfer of learning. The scale score for Supervisor/Manager Sanctions at the 60-day period was 2.0, which was comparable to 2.3 in the Holton, Chen, and Naquin study, and 2.1 in the pilot study. Remember that not actively opposing

training meant that the research participants did not perceive any *negative* responses from their supervisors. Unfortunately, the scale score for Supervisor/Manager Support (Specific Training Program Scales) regarding goal-setting and personal supervisory involvement in the training application process was only (2.7) at the 60-day period, compared to (2.8) in the Holton, Chen, and Naquin study, and (2.8) in the pilot study, which were also low.

Other Implications

One surprising development that unfolded during the study was that the short-to-intermediate term and long term GROTB increases over the baseline for each of the three participants grew proportionately to one another. For example, the intermediate (30-day) percentage increases for participants 1, 2, and 3 were (300), (380), and (607) (see Table 6). The difference between participant 1 and 2's increases was (80). The difference between participant 2 and 3's increases was (227). At the 60-day period, the increases for participants 1, 2, and 3 were (555), (720), and (1180) (see Table 24). The difference between participant 1 and 2's increases was (165), slightly more than double (by 5) the previous difference. The difference between participant 2 and 3's increases was (460), again slightly more than double (by 6) the previous difference.

The 30-day point, revealed participant 3 had the highest increase, followed by participant 2 who had the second highest increase, and participant 1 who had the lowest increase of the three. Interestingly, the 60-day point revealed participant 3, again had the highest increase, followed by participant 2 with the second highest increase, and participant 1 with the lowest increase.

Without further investigation, these increases could appear to be coincidental. However, these occurrences were actually shaped by random events. The research volunteers just happened to fall into separate and distinct categories of management, within the middle management stratum. Participant 1 was the highest-level middle manager-leader, with the most years of experience, and directed fifteen to twenty employees. Participant 2 was a mid-level middle manager-leader, with fewer years of experience than participant 1, and directed five to seven employees. Participant 3 was a lower level middle manager-leader, with the least years of experience, and directed two to four employees. It was not by design that participant 1 had the third highest increase but the highest mid-level manager designation, and participant 2 had the second highest increase but the second highest mid-level manager designation, and participant 3 had the highest increase but the lowest mid-level manager designation. Participant 1 with the most experience started with a greater baseline and consequently it was harder to increase, whereas participant 3 with the least experience for example, started out with a lower baseline but had greater potential for increase.

In the following section, these occurrences will be examined more closely and discussed within the context of future research.

Recommendations for Future Research

Due to the unexpected findings discussed in the previous section, the possibility for significant future research has emerged. When analyzing the research participants' average increases and comparing them to their employment rank and years of experience, it appears that participant 3, the lowest ranking mid-level manager-leader, with the least years of experience, had the highest increases, followed by participant 2, the second

senior mid-level manager-leader, with the second highest increases, and so forth for participant 1.

What this suggests possibly is that manager-leaders who have more years of problem solving experience, and subsequently have achieved higher levels of management responsibility and legitimacy, also have greater problem solving capabilities, and thus, require less training in handling difficult or complex situations. The opposite, of course would be true for manager-leaders with less years and experience. Also, it would be logical to assume that in many instances, senior level manager-leaders have had successful track records in accomplishing program goals. Without these efforts, it would not be possible to advance to higher levels of management, where the work projects usually become more complex in nature and the problems more difficult to solve.

But at the other end of the spectrum, manager-leaders with less experience, who aspire to eventually attain higher level responsibility and rank, have everything to gain by attending training that might give them the requisite knowledge and skills required to propel them "upward." During the study, this became apparent through the efforts of participants 2 and 3, when they took greater advantage of the training, especially the coaching, in order to achieve greater problem solving competencies and leadership skills.

To facilitate greater understanding of how much training and coaching manager-leaders at different corporate levels really need, follow-up studies could prove very valuable in customizing training programs and tools to fit specific management needs.

Recommendations for Future Training

There is no design or model that can precisely fit every kind of training need. However, research has shown that a more comprehensive and studied approach to learning transfer can greatly enhance the potential for training, to transfer in many situations. Of particular concern during this study was the low scale score regarding Supervisor/Manager Support (Extent to which supervisors and managers support and reinforce use of training on the job). The fact that this scale was low both short and long term, indicated that the research participants did not think their supervisors/managers felt strongly enough about their training to actually set goals for them, which could have given them more encouragement to apply the training to the job.

So what accounts for some of the high increases in observed target behaviors? This researcher believes that Supervisor/Manager Support was significantly complimented by the post intervention/training; i.e., coaching and feedback provided by the trainer (this researcher). Coaching is essential to learning transfer because it affords trainees the opportunity to continue to improve on what they learned during the training and to receive direct feedback. Though the immediate supervisor plays an important role in creating an atmosphere for success, it is the trainer who is more skilled and equipped to provide the necessary impetus and constant encouragement and motivation that sustains prolonged growth through learning transfer.

The general environment in most large organizations today is very stressful and time consuming. It is not that supervisors do not want to extend themselves to providing ongoing support for their staff that have become involved in training, but the constraints

of their jobs and tight schedules do not allow sufficient time, to completely invest in continuous coaching and feedback. Therefore the task falls primarily on the trainer.

One of the first things that should be assessed before implementing training, is the extent to which the trainees' supervisor can become involved in providing ongoing support; that is goal-setting and post training participation. This aspect of the needs analysis process is crucial to developing a coherent plan for supporting learning transfer. Next, it should be made very clear to anyone sponsoring training that lack of supervisor post training involvement will greatly diminish chances for learning transfer. Sometimes, learning transfer is not the objective of the training but this would be the exception to the rule. Unless both the supervisor and person sponsoring the training, and the trainer completely understand the objectives and goals of the training, it should not be implemented.

Conclusion

The aim of this research was to develop a learning transfer model based on behavior change theory and practices, in order to help manager-leaders attain higher proficiencies in problem solving methodologies. Today, even lower-level managerial, professional, and technical employees require leadership competencies to adequately function in the corporate arena. To this end, leadership and problem solving are inexorably linked, and power rests in the hands of those individuals who are most central to solving an organization's crucial problems and ensuring the company's long-term viability (Kouzes & Posner, 2002).

Although the results of this study can only be generalized within the specific department of the organization in which they were achieved, the successful application of

the Contextual Problem Solving Training Model, with regard to learning transfer, is evidence that with further research, the model may be applicable to many kinds of businesses. Among the many elements that contributed to the body of knowledge concerning this research project, three in particular stood out: 1) The influence of the work environment on learning transfer, 2) the role of the supervisor, and 3) follow-up coaching and feedback.

Baldwin and Ford (1988) found only seven studies that examined the influence of the work environment on learning transfer and none that attempted to change the work environment. Unless the work environment can be made conducive to learning transfer, especially from the standpoint of behavior modification, then no amount of learning will increase the probability of successful transfer for the majority of trainees. During this study every effort was made to make the work environment amenable to optimal learning transfer.

To ameliorate the negative impact of such consequences as work pressures and project timelines with regard to the research participants, involving the participants' supervisors and gaining their support to facilitate the training created a supportive transfer environment. Baldwin and Ford (1988) established that even well-learned skills could not be maintained if the trainees were not motivated or did not have their supervisors support. A successful attempt was made to elicit supervisory sponsorship and future commitment, which at the very least, insured that barriers to transfer were minimized. Although the supervisors involved in sponsoring the training process did not go so far as to lay the groundwork for goal-setting and performance outcomes with each of their direct reports (research participants), they did actively support and encourage

them to employ what they had learned, and prevented barriers that may have caused failure of transfer. But post training researcher coaching appeared to have a greater impact on the performance outcomes, as indicated by the large increases in observed target behaviors in each of the participants.

Manager-leaders must know that what they learn, not only has relevance to their work setting, but is also part of a follow-up plan to incorporate the new skills into the job. Many companies that proactively approach training do not appear to place high emphasis on examining the "results" of the training (Olsen, 1998) and thus, are left without the benefit of knowing whether or not the training was actually successful. This is one of the reasons why only a small portion of the skills and knowledge learned during training are actually transferred back to the job. (Burke & Baldwin, 1999; Broad & Newstorm; 1992; Baldwin & Ford, 1988). Kelly (1982) related that much of the problem lies in the fact that organizations do not expressly require that trainers or management education consultants know how to build transfer into training programs, or that they have a follow-up plan to measure the results of the training.

One of the major strengths of the Contextual Problem Solving Training Model was the careful attention to how the research participants were going to receive cogent coaching and feedback (i.e., follow-up training), and how results would be measured. This was the lynchpin that tied the training to the successful performance outcomes.

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APPENDICES

APPENDIX A

GUIDE FOR RESEARCHER'S OBSRVATIONS

OF TARGET BEHAVIORS

GUIDE FOR RESEARCHER'S OBSERVATIONS OF TARGET BEHAVIORS	
Name: Date: Time:	Problem/Situation 1 2 3 4
Supporting Behaviors	
The participant is observed communicating that s/he will *lead* or *support* the solution. **Leadership**	1
The participant is observed communicating with *co-workers* about the problem. **Communication/ Co-workers**	2
The participant is observed communicating with *subject matter experts* about the problem. **Communication/ SMEs**	3
The participant is observed using *visual representations* to identify and analyze the various aspects of the problem. **Visual Rep.**	4

GUIDE FOR RESEARCHER'S OBSERVATIONS OF TARGET BEHAVIORS	
Name: Date: Time:	Problem/Situation 1 2 3 4
Analysis Model Behaviors	
The participant is observed gathering *basic information/facts,* to determine the root cause of the problem. **Facts**	5
The participant is observed *looking for relationships/ interpreting* facts and ideas. **Interpretation**	6
Determine sustained or potential damage or threat posed by the problem. May be expressed in dollars, lost reputation, lost time, etc., or combination. **Scope**	7
The participant is observed breaking down the problem into *components* and or *identifying distractions*. **Analysis**	8

GUIDE FOR RESEARCHER'S OBSERVATIONS OF TARGET BEHAVIORS	
Name: Date: Time:	Problem/Situation 1 2 3 4
Analysis Model Behaviors	
The participant is observed using *backtrack/forward track* technique to analyze and solve the problem. **Backtrack/ Forward Track**	9
The participant is observed using *simulation* technique to analyze and solve the problem. **Simulation**	10
The participant is observed using *matrix* technique to analyze and solve the problem. **Matrix**	11
The participant is observed using *design* technique to analyze and solve the problem. **Design**	12

GUIDE FOR RESEARCHER'S OBSERVATIONS OF TARGET BEHAVIORS	
Name: Date: Time:	Problem/Situation 1 2 3 4
Analysis Model Behaviors	
The participant is observed using *prototype* technique to analyze and solve the problem. **Prototype**	13
The participant is observed using *analogical* technique to analyze and solve the problem. **Analogical**	14
The participant is observed using *pattern* technique to analyze and solve the problem. **Pattern**	15
The participant is observed *synthesizing* – combining ideas to form a new whole. **Synthesis**	16

GUIDE FOR RESEARCHER'S OBSERVATIONS OF TARGET BEHAVIORS	
Name: Date: Time:	Problem/Situation 1 2 3 4
Analysis Model Behaviors	
The participant is observed *qualifying* the problem. **Qualification Model**	17
The participant is observed attempting to *develop alternative solutions.* **Develop Alternative Solutions**	18
The participant is observed attempting to *predict outcomes.* **Predict Outcomes**	19
The participant is observed *ranking alternatives.* **Evaluation**	20

GUIDE FOR RESEARCHER'S OBSERVATIONS OF TARGET BEHAVIORS	
Name: Date: Time:	Problem/Situation 1 2 3 4
Analysis Model Behaviors	
The participant is observed *implementing a solution.* **Application**	21
The participant is observed *measuring results.* **Measure Results**	22

APPENDIX B

LTSI TRAINING IN GENERAL SCALES

AND SPECIFIC TRAINING PROGRAM SCALES

LTSI TRAINING IN GENERAL SCALES

Transfer Effort – Performance Expectations

65 My job performance improves when I use new things that I have learned.

66 The harder I work at learning, the better I do my job.

69 Training usually helps me increase my productivity.

71 The more training I apply on my job, the better I do my job.

Performance – Outcomes Expectations

64 The organization does not really value my performance.

67 For the most part, the people who get rewarded around here are the ones that do something to deserve it.

68 When I do things to improve my performance, good things happen to me.

70 People around here notice when you do something well.

72 My job is ideal for someone who likes to get rewarded when they do something really good.

Resistance/Openness to Change

73 People in my group generally prefer to use existing methods, rather than try new methods learned in training.

74 Experienced employees in my group ridicule others when they use techniques they learn in training.

75 People in my group are open to changing the way they do things.

76 People in my group are not willing to put in the effort to change the way things are done.

77 My workgroup is reluctant to try new ways of doing things.

78 My workgroup is open to change if it will improve our job performance.

Performance Self-Efficacy

82 I am confident in my ability to use new skills at work.

83 I never doubt my ability to use newly learned skills on the job.

84 I am sure I can overcome obstacles on the job that hinder my use of new skills or knowledge.

85 At work, I feel very confident using what I learned in training even in the face of difficult or taxing situations.

Feedback/Performance Coaching

79 After training, I get feedback from people on how well I am applying what I learn.

86 People often tell me things to help me improve my job performance.

87 When I try new things I have learned, I know who will help me.

89 I regularly have conversations with people about how to improve my performance.

LTSI SPECIFIC TRAINING PROGRAM SCALES

Learner Readiness

1 Prior to the training, I knew how the program was supposed to affect my performance.

9 Before the training, I had a good understanding of how it would fit my job-related development.

10 I knew what to expect from the training before it began.

13 The expected outcomes of this training were clear at the beginning of the training.

Motivation to Transfer

2 Training will increase personal productivity.

3 When I leave training, I can't wait to get back to work to try what I learned.

4 I believe the training will help me do my current job better.

5 I get excited when I think about trying to use my new learning on my job.

Personal Outcomes/Positive

6 If I successfully use my training, I will receive a salary increase.

16 Employees in this organization receive various 'perks' when they utilize newly learned skills on the job.

17 If I do not use my training I am unlikely to get a raise.

Personal Outcomes/Negative

14 Employees in this organization are penalized for not using what they have learned in training.

21 If I do not use new techniques taught in training I will be reprimanded.

23 If I do not utilize my training I will be cautioned about it.

24 When employees in this organization do not use their training it gets noticed.

Personal Capacity for Transfer

19 My workload allows me time to try the new things I have learned.

25 I have time in my schedule to change the way I do things to fit my new learning.

26 Someone will have to change my priorities before I will be able to apply my new learning.

27 I wish I had time to do things the way I know they should be done.

Peer Support

28 My colleagues appreciate my using new skills I have learned in training.

29 My colleagues encourage me to use the skills I have learned in training.

30 At work, my colleagues expect me to use what I learn in training.

31 My colleagues are patient with me when I try out new skills or techniques at work.

Supervisor/Manager Support

32 My supervisor meets with me regularly to work on problems I may be having in trying to use my training.

33 My supervisor meets with me to discuss ways to apply training on the job.

37 My supervisor shows interest in what I learn in training.

39 My supervisor sets goals for me that encourage me to apply my training on the job.

40 My supervisor lets me know I am doing a good job when I use my training.

43 My supervisor helps me set realistic goals for job performance based on my training.

Supervisor/Manager Sanctions

38 My supervisor opposes the use of the techniques I learned in training.

44 My supervisor would use different techniques than those I would be using if I use my training.

45 My supervisor thinks I am being ineffective when I use the techniques taught in training.

Perceived Content Validity

47 The instructional aids (equipment, illustrations, etc.) used in training are very similar to real things I use on the job.

48 The methods used in training are very similar to how we do it on the job.

49 I like the way training seems so much like my job.

58 What is taught in training closely matches my job requirements.

59 The situations used in training are very similar to those I encounter on my job.

Transfer Design

52 The activities and exercises the trainers used helped me know how to apply my learning on the job.

53 It is clear to me that the people conducting the training understand how I will use what I learn.

54 The trainer(s) used lots of examples that showed me how I could use my learning on the job.

55 The way the trainer(s) taught the material made me feel more confident I could apply it.

Opportunity to Use Learning

56 The resources I need to use what I learned will be available to me after training.

60 There are enough human resources available to allow me to use skills acquired in training.

61 At work, budget limitations will prevent me from using skills acquired in training.

63 It will be hard to get materials and supplies I need to use the skills and knowledge learned in training.