Critical Thinking in the Workplace

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CRITICAL THINKING IN THE WORKPLACE

A Thesis Presented
by
GLORIA ASSELLTA CAIRNS

Submitted to the Office of Graduate Studies, University of Massachusetts
Boston, in partial fulfillment of the requirements for the degree of

MASTER OF ARTS
June 1997

Critical and Creative Thinking Program
CRITICAL THINKING IN THE WORKPLACE

A Thesis Presented

by

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ABSTRACT
CRITICAL THINKING IN THE WORKPLACE
June 1997
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Richard Paul, a leading figure in the critical thinking movement, and Robert Reich, Secretary of Labor in the Clinton Administration report that the need for applying critical thinking skills in the workplace is essential, if America is to remain competitive in the global economy. The degree to which employees think insightfully and are able resolve complex problems will determine how competitive a business remains. In the past two decades, an unprecedented number of American businesses have been bought-out, merged with another, or downsized. This has forced American workers at every level of organizations to re-think their notions of change, company loyalty and job security in these new contexts.

When an acquisition occurs some employees suddenly find themselves without a job, while others are left behind to deal with changes instituted by their new employer. This thesis is about thinking and change, as it applies to employees who have been transferred as a result of an acquisition or merger. It describes a four-day workshop dealing with the effects of change for both current and newly relocated employees.

The overall content design of the workshop and the rationale are based on selected writings by Chris Argyris, Professor of Education and Organizational Behavior at Harvard
University, and Peter Senge, Director of The Learning Organization Center at Massachusetts Institute of Technology. Both scholars have conducted numerous workshops on organizational development principles as they are applied and validated in actual business settings.

The target group of participants includes mid to high level managers, chosen for their demonstrated ability to drive complex problems to resolution. The workshop will consist of a combination of focused discussions, small group exercises, a case presentation and a task requiring collaboration among participants.

Workshop participants will study and discuss critical thinking as it relates to organizational change and the integration of new employees into the corporation. A key outcome of the workshop will be the creation of a model strategy which addresses the integration of new employees into the company.
This thesis is dedicated with deepest love to my daughter Kristina, to my sisters Janet and Anna, my brothers-in-law Bob and Carlo, and to Paul, my soul mate and staunchest supporter.
I wish to extend my heartfelt thanks to the following people: to Judith Collison for her clarity of vision, generosity of time, and sense of humor; to Sharon O' Connor, Ed.D. who juggled a demanding schedule with her toddler triplets to provide insightful comments and encouragement, and finally, a warm thank-you to Delores Gallo for the pivotal role she played in reviewing and orchestrating the final work of this effort.
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CHAPTER I

INTRODUCTION

Frequently in the New York Times and Wall Street Journal, we read of American corporations restructuring, merging and downsizing to increase profitability and efficiency. In these current corporate environments, managers report concerns about ongoing change and how best to promote stability and integrate into the culture, new employees as well as those transferred as a result of a merger or take-over. A few of the unsettling changes that occur are: groups are moved to new organizations, employees are assigned to new projects with little notice, and mentors are no longer made available as part of succession planning.

For many, instability in the work environment becomes a source of personal vulnerability resulting in unilateral self protective behaviors. In the workplace, self confidence means that people believe they are effective, self governing systems (Argyris 1964). If the environment is unstable and unpredictable, commitment to the organization plummets.

As one who was involuntarily transitioned from a challenging job to the ranks of the unemployed, I understand the range of concrete issues and emotions that arise from being part of a down-sizing effort. Thus, this paper offers the personal reflection of a manager in transition and a review of research on the subject of organizational development. These are the two perspectives from which this constructive response was created. This thesis attempts to address critical thinking skills and planning issues that
Managers struggle with in their efforts to develop productive individuals and strong work teams.

Managers are most interested in creating an environment in which employees see the need to perform at high levels, as a means of remaining competitive within the overall organization. However, as evidenced since the 1980s, competent employees with relevant experience and important skills are as expendable as those of questionable value to the company, when the chopping block is taken out of storage. "The need for predictability is not a need for guarantees. Even if people can’t know the odds of achieving a certain outcome, they are willing to accept uncertainty if they believe their experience gives them an advantage." (Stevenson and Moldoveau, 1995, 141) Therefore, as individuals our world views drive our behavior and determine the level to which we accept change.

In his research Robert Reich found that as adults our view of the world becomes compartmentalized. "Our tendency in later life is often to view reality as a series of static snapshots - here a market, there a technology, here an environmental hazard, there a political movement (I would add, here a merger, there a downsizing). Relationships among such phenomena are left unprobed...In the real world, issues rarely emerge predefined and neatly separable." (1992, 231)

Most unsettling to many is the overwhelming evidence that ongoing change in the workplace is a reality that is not expected to go away in the foreseeable future. By all observations reported to me by managers, the indicators are that people are spending more time talking about potential change and its effect upon them; groups are anxious to fit
securely into the larger organization; advancing new ideas or strategies at group level
meetings is reduced; and overall synergy within the organization is noticeably lowered.
If, as suggested by Argyris, managers design their actions to achieve the outcomes they
want (i.e., lead the change effort), it may follow that internalizing the principles of change
and critical thinking is a place to start.

An overview of the thesis follows. In Chapter I, I offer an explanation of the
internal problems related to corporate downsizing, from the point of view of employees
and managers, and I report on the challenges managers face regarding employee
development and human resource planning after downsizing. Chapter II presents the
major research material consulted and the ideas extracted from them to form the
conceptual framework of the workshop. Chapter III offers an in-depth research-based
theory on individual learning, thinking abilities, values and behaviors and methods of
reasoning. In Chapter IV, I discuss the workshop learning activities in detail, including
individual learning styles, critical thinking, a case study, small group activities and
homework assignments. In Chapter V, I present a procedure for evaluating the workshop
as a relevant learning experience and offer my final reflections concerning what is possible
as a strategy to ensure ongoing employee integration and development.

The workshop I have designed will explore, through a Harvard Business School
case study, and other exercises, how critical and creative thinking principles can be applied
to manage the change process in the work setting. Employees and managers alike have
many shared as well as conflicting problems and needs. The area of overlapping concerns
represents rewards for both groups. This is where the needs of employees are met and
where effective team building and coaching opportunities are found by managers. As Kolb (1976) and Moldeveau (1995) suggest, managers and employees alike want to feel that they are valued, and the work they do makes a difference; they want to make use of the skills they enjoy using, and enhance their knowledge and skills in preparation for more interesting assignments; and finally, both want to be justly rewarded for their efforts.

How can some measure of this be accomplished in light of what is currently taking place? Many American-owned large corporations are making huge profits at the same time as they systematically terminate employees by the thousands. With this in mind, how can employees function at effective levels, that is, manage outcomes in work environments over which they have minimal control?

In-service workshops about Change can be interesting and thought provoking, yet as reported by scholars such as Ruth Wade (1978), the learning will remain at the shallow level if the culture of the organization does not actively practice what it is advancing across organizations. Further, Wade's most compelling argument is that direct coaching, rather than hit or miss influencing, is where the greatest learning occurs. Coaching is a more concrete and direct method of transferring skills and learning to another.

Central to my workshop is the exploration of what, and how, individuals think about the challenge of integrating newcomers, and the consequences of such thinking. This awareness can make a difference in the way problems are defined and solved, and the manner in which ambiguity and unpredictable outcomes are dealt with.

This thesis is based on the following premises: when an acquisition occurs, employers are faced with many new challenges, most prominent among them is the
problem of redundancy in staffing. As a result, some employees suddenly find themselves without a job, and others are left behind to fend for themselves with their new employer. In many organizations, one function of management is to help employees rally around management's efforts to assimilate newcomers into the group. For all employees, including the displaced newcomers, many factors can impede embracing change. Some are identifying roles and responsibilities, relevant skills and attributes, and building new alliances. When managers coach employees through a change process everyone benefits: employees know they are being helped, and managers deepen their expertise at coaching others.

The following goals form the basis for the workshop. Participants will examine critical thinking as it relates to organizational change and the consequences of change in the integration of employees into new positions in the corporation. The group will examine critical thinking as it relates to the problems associated with the integration of displaced employees and finally, participants will produce a model for strategies to integrate new employees into the company.

The following workshop objectives represent the critical learnings for participants.

1. Understand the managerial issues of integrating new employees who come into the corporation as a result of an acquisition, or merger.

2. Create a strategy that involves people and process as the vehicle for effective thinking and problem solving in this context.

3. Understand the professional and personal value of being part of a joint community of problem solvers, in the organizational context.
4. Know how to work across functions to help drive a well thought-out plan for change at the management level.

This workshop is intended for middle managers who are responsible for individual contributors and small groups, within a matrix or hierarchical organization. They are selected because of the common issues they face and problems they need to solve. Middle managers are pivotal in driving the change process: they are conduits between senior level management and their own employees - bearing the responsibility of carrying views and expectations of each group to the other.

Few middle managers, particularly in technical fields, have extensive training in planning human resources interventions, most rely on organizational development professionals for help. In an effort to reinforce the benefits of their learning, attendees will be encouraged to support each other by meeting in small teams, bi-monthly, for status updates on the integration process, to coach each other, and to advance the principles of critical thinking. A facilitator will schedule and attend post workshop follow-up meetings with each team.
CHAPTER II

WORKSHOP RATIONALE

In this chapter I discuss the key sources of research-based material consulted and used as the conceptual framework of the workshop. The authors most frequently quoted are scholars widely recognized for their major contributions to the fields of education, organizational development, philosophy, or psychology.

Key References

The overall content design of the workshop is based on selected writings of Chris Argyris, a James Bryant Conant Professor of Education and Organizational Behavior at Harvard University. The foundation on which my workshop is designed was greatly influenced by the substantive reading I have done of Dr. Argyris' research-based writing, in particular Integrating The Individual and the Organization published in 1964 and Reasoning, Learning and Action published in 1982. His publications are rich with examples of the complexity of how humans reason, our self-imposed limitations and how we accept change within the workplace. I developed workshop activities combining an analysis of the case study method and processes I adapted from Reasoning, Learning and Action. Finally, what I read of Argyris' research led me to many other readings that helped to deepen my appreciation of organizational systems and human behavior.

Two publications, The Fifth Discipline published in 1990 and The Fifth Discipline Fieldbook published in 1994, both by Peter M. Senge, Director of The Learning Organization Center at the Sloan School of Management, Massachusetts Institute of
Technology were used extensively as a source for building activities. Systems Thinking is the fifth discipline in Peter Senge's theory of the learning organization; it integrates the four disciplines of Building a Shared Vision, Mental Models, Team Learning, and Personal Mastery. In The Fifth Discipline, Senge offers the reader fresh insight into how we can improve the way we learn as individuals and as organizations. He reports, "Through learning we reperceive the world and our relationship to it. Through learning we extend our capacity to create, to be part of the generative process of life." (p. 14) Senge's Fieldbook was published as a sequel to The Fifth Discipline and contains useful anecdotal evidence of how important concepts such as Mental Models and the Ladder of Inference have been used in consulting engagements. I created workshop activities adapted from these sources, most notably the Ladder of Inference. Both Senge and Argyris have conducted numerous workshops in which their organizational development principles have been tested, applied and validated in actual business settings.

References frequently consulted include Transitions, by William Bridges, published in 1983. This book is one I have used for personal reflection in my own experience of being devastated by the loss of a job I found enormously fulfilling. I have used material from this book to teach others, in workshop settings, how to identify the emotional stages we experience as we move through a major transformation in our life. This book is recommended to facilitators or managers working with groups or individuals in a transitory stage in their career.

Transitions is a useful resource to managers engaged in creating a formal Plan for integrating and developing new and displaced employees into the organization. The
questions to be asked in preparing workshop participants to create their own Plan are based on concepts from the book and what it takes to look to the future in planning with employees.

Learning Style Inventory by David Kolb is a self-scoring instrument that gives the individual test-taker insight into his/her habits of approaching new learning and problem solving experiences. Since organizations learn, develop capabilities and function through its members, some knowledge of individual learning theory is crucial for understanding learning at the organizational level. This is included in the workshop to draw a parallel between flexibility in thinking and flexibility in learning, and to increase awareness of differences in learning approaches required of specific jobs. "The importance of individual learning for organizational learning is at once obvious and subtle - obvious because all organizations are composed of individuals; subtle because organizations can learn independent of any specific individual but not independent of all individuals". (Kim, 37)

The manager who understands the importance of balancing reflective conceptual learning which is cognitive-based with experiential learning which is based on stimulus-response, is more likely to transfer knowledge and skills in ways that meet the learning needs of his/her employees.

C.J. Jung Speaking by William McGuire and R.F.C. Hull, published in 1977. Jung's research resulted in his theory of psychological types: the introvert who is drawn away from a stimulus like a magnet to within, and the extrovert who is drawn toward others and to external stimuli. Jung's research led him to distinguish four functions of the psyche:
thinking, feeling, sensation and intuition. Finally, Jung's postulations provided the basis for Kolb's Learning Style Inventory.

Critical Thinking, by Richard Paul, published in 1992 is used as an important reference source in the workshop design. Paul is a distinguished scholar in the field of philosophy and an international leader in the field of critical thinking. His definition of thinking abilities is used as a key reference in the workshop for explaining what occurs in our thinking as we reason from the concrete to the abstract and seek to resolve a problem.

The Work of Nations by Robert Reich, published in 1992 was selected for its broad approach to America's current dilemma about how best to remain in the forefront in productivity and in the growing international marketplace. Reich reports that only those individuals with solid analytical skills will secure the most desirable jobs - not a new message but one heard with increasing frequency. The significance in selecting this book is to generate discussions about the importance of critical thinking and planning in the workplace.

The Floundering Expatriate, Harvard Business Review Case Study, by Gordon Adler, published in 1995. This case study captures the essence of the workshop theme in that it presents a relevant and multi-layered organizational problem of internal politics, issues of competencies and issues surrounding assimilation of a newly hired individual.

On Becoming a Leader by Warren Bennis, 1994. Bennis is best known for his principles of management and leadership. His writing promotes many thinking and behavioral concepts. Among them are reflective thinking, thinking from another point of
view and the pursuit of self knowledge and self belief. Anecdotes from the book can be used in the workshop to illustrate learning concepts.

Analysis used in creating workshop content is based on review of scholarly articles about critical and creative thinking, with specific emphasis on the change process within a business environment. Three workshop manuals were reviewed for content and form: Investment in Excellence, by Louis Tice is a five-day training program for managers and individual contributors who wish to become more effective on the job and in their life. The overall themes are about thinking in ways that make more options possible, expanding one's ability to create and implement meaningful goals and in general improving one's performance and self esteem; Management Skills and Practices, Stackhouse, Garber and Associates, is a two-week management training for mid-level managers. The program educates managers in effective interpersonal styles of managing, ways of developing teams and individuals, and the criticality of creativity, innovation and ability to adapt in a competitive business climate; Managing Organizational Change, Organizational Development Resources, Incorporated, is a five-day workshop that educates managers for long-range planning in the context of downsizing organizations, and planful moving or transitioning employees from the corporation. Finally, I studied workshop methods as practiced and reported by Chris Argyris in Reasoning, Learning and Action.

Workshop Format: Material will be presented in a way that models the cognitive path of Kolb's Learning Cycle of thinking, doing, feeling and observing, although not always in that sequence. Short lectures will be followed by whole group discussions carried forward in small group activities and discussions. At the end of each module, and
in keeping with the adult learning theory of Raymond J. Wlodkowski, time is allotted for quickly reviewing key learning points of the unit to clarify new learning, and to put learning in context of the overall goals, sequences of ideas, and conceptual issues. The workshop is designed to maximize participation, therefore, the number of participants will be limited to 15.

Built into the workshop schedule is reflection time at the end of each day on learning and insights. This will be done first alone and then with a partner. Keeping a journal is highly recommended. Time will be allotted for writing about what was learned during the session, any mistakes or difficulties that were encountered, and remarks about personal progress.

Homework assignments will be given with explanations regarding the specific goal of the assignment. The aim of assigning outside work is to reinforce the ideas covered in the workshop, provide opportunities to evaluate learning, and uncover difficulties people have with content.

Schedule. The workshop will be held for four full days on four consecutive Fridays, in an off-site location. This day and schedule was selected because managers find it difficult to be away from their work responsibilities for more than a day at a time. From a learning perspective, having the workshop on a Friday gives participants opportunities to think, over the weekend, about their learning, and to complete homework assignments. Further, this can be accomplished in an environment free of the normal, and competing concerns of the workplace.
**Materials:** Each participant will be provided with a Workshop Manual containing the following material: Workshop Goals and Objectives, Agenda, Handouts, Section for Journaling, a Bibliography and a name tent.

**Facilitators:** Two people will facilitate the workshop, preferably a man and a woman who will alternate in presenting workshop material, and provide support to each other. Facilitators model team work and cooperative learning behavior during the workshop. When a facilitator is not working directly with the group, he/she will watch and take notes about how the group responds to the activity. These responses will provide some of the feedback necessary in order to make adjustments to the flow of the workshop material. For example, depending upon the learning styles most prevalent in the group, it will be necessary to slow down, or step up the pace to accommodate the majority of people, or vary the activity.

**Deliverables of Workshop**

Each participant will have a written Draft Plan that addresses a strategy for integrating transferred people into their groups. The Plan will be shared with their managers and later with their employees. At each level, the expectation will be that people will have time to review the plan and provide constructive feedback before implementation begins. Key elements of the workshop are found in Figure 1, which I designed.
Key Modules of the Workshop

- David Kolb's LEARNING STYLES INVENTORY
- DRAFT PLAN OF INTEGRATION STRATEGY PRESENTATIONS
- CRITICAL THINKING and CREATIVE THINKING
- CASE STUDY and SCRIPTING
- Chris Argyris' MENTAL MODELS
- Chris Argyris' and Peter Senge's LADDER OF INFERENCE

Figure 1
In this chapter I discuss the theoretical background on which the following key topics and activities of the workshop are based: Learning Styles Inventory, Thinking Skills, Mental Models and The Ladder of Inference.

Learning Styles Inventory

David Kolb created the Learning Style Inventory (LSI) as a simple, self-reporting instrument to measure an individual's strengths and weaknesses as a learner, and as a means to identify and conceptualize individual differences in learning styles and corresponding learning environments.

The model is based on experiential learning theory which addresses the opposing tensions between abstract-concrete and active-reflective orientations. The model emphasizes the important role that experience plays in the process of learning. Further, it is consistent with the concepts of Carl Jung's psychological "types" or "styles" in which Jung defines how humans relate to their external and internal environments, and states that "... fulfillment in adult development is accomplished by higher level integration and expression of non-dominant modes of dealing with the world." (Kolb, 1976) It is commonly known that Learning encompasses two meanings: (1) the acquisition of know-how in doing something, that is, the practical, operational aspects of a task, and (2) the acquisition of know-why, that is, understanding of the conceptual meaning of an experience. Finally, Kolb tells us that "Learning is the process whereby knowledge is
created through the transformation of experience." (1984) For example, an auto mechanic
who has mastered the skills of repairing brakes without understanding the principles of
how brakes work, can not be expected to invent new brake design improvements. This
connection between thought and action is at the core of critical thinking and is advanced
by many theorists, including Jean Piaget, John Dewey (1952), Mathew Lipman and
Richard Paul.

The Instrument: The LSI has two parts, the Learning Cycle and the Learning Style.
The first part asks the user to complete 12 sentences by selecting, and ranking, from a
choice of four behavioral statements for each sentence, the action one takes in going about
learning something new. The numbers are tabulated and combined, and the results indicate
the extent to which one relies on the following learning modes which define the Learning
Cycle.

Concrete Experience (CE) means one relies on personal feelings and one's ability
to be open-minded and adaptable to change. Reflective Observation (RO) refers to the
ability to understand ideas and situations from different points of view, be objective,
patient and to rely on one's own thoughts and feelings to form opinions. Abstract
Conceptualization (AC) means the learner uses logic and ideas, systematic planning and
develops theories and ideas to solve problems. Active Experimentation (AE) means one
takes action and experiments with influencing or changing a situation, has concerns about
what will work as a solution, values results, and getting things done.

Since learning is a cycle of activities, as learners we can start anywhere in the
cycle, backtrack and crisscross, as many times as we wish in what appears to be random
order. (Figure 2) The second part of the test uses the same numerical data for plotting a
graph and provides a visual representation regarding the style one has a preference for. As
Figure 3 illustrates, the LSI is divided into four equal quadrants and the combined
activities from contiguous quadrants of the circle determine the four different styles.

Starting at the top of the model, (Figure 3) and moving clockwise around the
circle, the following Learning Styles are configured: combining the elements of CE and
RO result in the Diverger Style; combining RO and AC result in the Assimilator Style; AC
and AE result in the Converger Style, and AE and CE together make the Accomodator
Style.

The Kolb LSI model is used to help participants improve understanding of their
preferred learning style, appreciate the different styles that they encounter in colleagues,
and address the gaps between the learning style their job requires and their personal
alignment to that style. The LSI is often used as a team building tool.

Critical Thinking Abilities

Managers want staff and employees to become conversant and creative in problem
solving, function in a demanding environment, and support creative efforts ranging from
cost saving practices to new product development. They want their staff to examine their
thinking processes (metacognition) by demonstrating how it is done, and modeling the
behaviors.

The payback of metacognitive thinking is increased confidence in decision making
for the individual, and ultimately for the corporation. It is a learning process that evolves
into a practice when it becomes internalized, natural and self-generated.
Active Learning Cycle - David A. Kolb

Concrete Experience
(FEeling)

Abstract Conceptualization
(Thinking)

Active Experimentation (Doing)

Reflective Observation (Watching)

Figure 2
18
Active Learning Styles - David A. Kolb

Concrete Experience
(Feeling)

ACCOMODATOR
Active
Experimentation (Doing)

DIVERGER
Reflective
Observation (Watching)

CONVERGER

Abstract Conceptualization
(Thinking)

ASSIMILATOR
Smart people often believe their reasoning is always correct; thinking successfully in one area of expertise does not guarantee success in other domains of knowledge. As Lipman reports, "Throughout our lives we rely to a considerable extent on the same core of primary reasoning skills; the basic repertoire of reasoning skills of the adult is relatively unchanged from the child's." (1991, 34)

Further, Lipman tells us that even when thinking in and about elaborate theoretical constructions, one utilizes relatively few cognitive skills since the process of thinking requires familiarity with a relatively small number of mental acts, reasoning and inquiry skills. It should be noted that without these essential skills it would not be possible to engage in complex thinking. Further, to apply these skills only in areas of expertise does not guarantee an automatic transfer of the same quality thinking in other areas of one's life.

According to Perkins (1990) when we want to transfer specified skills we practice the skills in a variety of settings until use of the skill is automatic. To use Perkins' example, learning to drive a manual shift car in different road conditions enables us to get behind the wheel of a small van or truck and drive with a level of confidence. This Perkins labels "low road" transfer, as opposed to "high road" transfer which is learning that is less concrete, and depends on the deliberate, mindful abstraction of a principle.

These workshops seek to engage learners in "high road" transfer. People sometimes prepare themselves for "high road" transfer by deliberately abstracting principles from prior experiences in anticipation of applying them in a related or new situation.
Richard Paul tells us, that what is at the heart of critical thinking is thinking that is principled, that is, it contains insight and a deep comprehension which links theory to practice. In other words, it is deep thinking that bridges the conceptual abstract with the concrete operational. It is more than procedural thinking, which is repetitive, and shallow by comparison. The following critical thinking abilities as defined by Paul (1992) are the abilities targeted by my workshop. The workshop aims to increase participant skill in (1) refining generalizations and avoiding over-simplifications (2) comparing analogous situations: transferring insights into new contexts (3) developing one's perspective: creating or exploring the implications of beliefs, arguments or theories (4) clarifying issues, conclusions or beliefs (5) clarifying and analyzing the meaning of words and phrases (6) developing criteria for evaluation: clarifying values and standards (7) evaluating the credibility of sources of information (8) questioning deeply: raising and pursuing root or significant questions (9) analyzing or evaluating arguments, interpretations, beliefs, or theories (10) generating or assessing solutions (11) analyzing or evaluating actions or policies (12) reasoning dialogically: comparing perspectives, interpretations, or theories (13) reasoning dialectically: evaluating perspectives, interpretations, or theories (14) reading critically: evaluating perspectives, interpretations, or theories (15) listening critically: constructing an accurate interpretation of understanding the elements of thought in, and evaluating, the reasoning of a text (16) writing critically: creating, developing, clarifying, and conveying, in written form, the logic of one's thinking (17) speaking critically: creating, developing, clarifying, and conveying, in spoken form, the logic of one's thinking. See Appendix 2.
These workshops assume three important things about which Paul (1992) writes: first, no one is without critical thinking skills whatsoever, second, we typically use reasoning to maximize getting what we want - often this is an unconscious process, and finally, scientific and technical problems have neater parameters than do the "messy" daily, real-world problems.

As stated earlier, in general, managers want staff and employees to become conversant and creative in problem solving. To achieve this takes time, and practice in learning and applying metacognitive skills. People most inclined to accept the principles of critical thinking, and new ways of approaching old problems, will, according to Robert Reich (1992), possess the following characteristics: (1) be comfortable with abstractions, and the use of symbols (2) think in systems, that is, translate from symbols into systems (3) have interest in looking to improve what they have, that is, experiment with new concepts and symbols (4) be very good at talking about their abstractions with others, and generally good at communicating with others.

Integrating transferred employees into the corporate culture will require individuals to draw upon critical thinking skills and the characteristics listed above. In my workshop, skills will be applied to a task related to human resources planning.

**Mental Models**

Chris Argyris, Professor of Education and Organizational Behavior at Harvard University has devoted the past 25 years of his teaching career conducting research and interventions with corporations of all sizes. He works in a consulting capacity with CEOs, board members and senior level managers. Argyris has published the results of his
findings, with the appropriate disguising of all names, in numerous books and scholarly articles. He is widely known for his theoretical work in organizational learning models, Model I, Organizational I and Model II, Organizational II, and a method of inquiry called Ladder of Inference.

According to Argyris, the basis of our thinking depends upon what we use as mental models, or frames of reference. Peter Senge describes mental models as "...deeply ingrained assumptions, generalizations, or even pictures, or images that influence how we understand the world and how we take action. Very often we are not consciously aware of our mental models or the effects they have on our behavior." (1990, 8) Further, the models are deeply ingrained in our long-term memory and influence our everyday perceptions and reasoning processes.

Argyris proposes that we are fundamentally rational, that is, we are self-governing beings who mentally design what actions we must take to achieve our desired outcomes. He further reports we feel a sense of success or failure, depending on whether we achieve our intentions and finally, we correct mismatches so that "... designs lead to a match between intention and outcome." (1993, 95) Argyris offers several examples, three are: (1) being successful in bringing closure to an important financial proposal or research effort (2) through dedicated networking a job is secured, at the desired level and salary (3) being invited to join a social club or group having special significance or status for one.

In his research, Argyris found that when people were successful in achieving their intended outcomes, they felt self-confident and were inclined to repeat their strategies in similar situations; when they were unsuccessful, they sought to understand their mistakes.
and correct them. He further reports that humans are designing creatures; they mentally
"... create, store and retrieve designs that advise them how to act", to produce certain
consequences or outcomes. (1993, 95) For example, new employees interact cautiously
with colleagues until they observe enough behaviors to confirm or disconfirm their initial
perceptions.

The mental designs we bring to a situation are general designs, or "Master"
programs for generic situations. It appears these generic designs are learned early in life,
repeatedly rehearsed over time, are taken for granted, and used skillfully, without
discussion. We are socialized from an early age with notions and skills that are counter­
productive to good reasoning. For example, we maintain self control and keep emotions
in check, in order to protect our status and reasoning processes. These are called face
saving strategies. Examples of such strategies follow: (1) the individual who backs down
in a disagreement when he is unable to present enough evidence to convince another, or in
an extreme case when he perceives to be "loosing", individual switches his line of
argument by taking sides with his perceived adversary (2) in a discussion of a complex
topic (defense spending, abortion) individuals becomes defensive about their position and
will bring the discussion to an abrupt halt rather than allow their line of reasoning to be
challenged.

Values and action strategies are at the root of one's sense of competence and self
esteem, therefore unless governing values are addressed, it is unlikely that changes in
action strategies will be lasting. Films offer many examples of such behaviors. The recent
Hollywood fictional film entitled Courage Under Fire is an excellent example of the
military values of honor and courage upheld by one senior lieutenant colonel, yet not shared by two young soldiers indirectly under his command. A test of the soldiers' commitment to honor and courage came during a critical moment in combat when they failed to rescue their wounded commanding officer, in order to ensure their own escape to safety. In subsequent scenes the soldiers are forced to taking responsibility for their heinous actions and lies.

Another less current film entitled Wall Street, is about a young broker whose ambition blinds him to values of honesty espoused by his family. The young broker learns how to obtain confidential information about failing companies or planned mergers from a valued, yet unscrupulous customer. The broker is coached into buying controlling numbers of shares for his customer while prices were low, and plans of sales and mergers were unknown to the investing public. This activity of manipulating the stock market is called "insider trading", and is a serious federal offense. In these two examples, the role of governing values and contradictory behaviors had far reaching consequences.

The above films bridge neatly to Argyris' theoretical models, also referred to as "theories-in-use." The two models represent the findings of many years of research on values and behaviors. Model I and Model II, (Figure 4). Model I has four governing values: (1) achieve your intended purpose (2) maximize winning and minimize losing (3) suppress negative feelings and (4) behave according to what you consider rational. The action strategies most characteristic of Model I are: (1) advocate your position (2) evaluate the thoughts and actions of others (as well as your own thoughts and actions) (3) attribute causes for whatever you are trying to understand. (1993, 53)
Model I

Governing Values:

(1) Achieve your intended purpose.
(2) Maximize winning and minimize losing.
(3) Suppress negative feelings.
(4) Behave according to what you consider rational.

Prevalent action strategies that arise from Model I:

(1) Advocate your position.
(2) Evaluate the thoughts and actions of others as well as your own thoughts and actions.
(3) Attribute causes for whatever you are trying to understand.

Comment: Individuals present their positions, assessments and attributions in ways that favor their position and inhibit inquiry from others.

Model II

Governing Values:

(1) Valid Information.
(2) Informed Choice.
(3) Vigilant monitoring of the implementation of their choice in order to detect and correct error.

Prevalent action strategies that arise from Model II:

(1) Advocate your position.
(2) Evaluate the thoughts and actions of others as well as your own thoughts and actions.
(3) Attribute causes for whatever you are trying to understand.

Comment: Individuals freely present their line of reasoning so that others are encouraged to challenge and correct it.
The values that emphasize winning over losing, and suppressing negative feelings, will produce self protective measures like controlling information, covering up embarrassment and emotions, and defensiveness: behaviors that block impartial and objective thinking. Further, as designing creatures, we often espouse values that are in direct conflict with our behavior.

Argyris found, in the hundreds of case studies he facilitated with adults, obvious disconnects between stated values and the actions people either took or recommended. Further, until it was pointed out to them, actor/participants were unaware of the disconnect between what they said and what they did or proposed to do.

Argyris noted this mismatch was found to be universally true among large groups of people from many industrialized nations of the world, regardless of culture, ethnicity, age, gender, levels of education and wealth. (1982) Once people see the mismatch, they are free to change their action strategies; it is at this juncture that the learning occurs. Impactful learning takes place when we are open to criticism, from self and others.

Model I actions are expected in daily, non threatening, routine tasks or in emergency situations when one must quickly assess and take action. In complex, non-trivial matters such as instituting new policies and procedures or integrating new employees, wherever continuous change is likely, Model II action is called for.

Model II governing values are: (1) insisting on valid information (2) making informed choice (3) vigilant monitoring of the implementation of choice in order to detect and correct error. The action strategies that are most characteristic of Model II are
identical to Model I: "advocate your position, evaluate the thoughts and actions of others, and attribute causes for whatever you are trying to understand." (1993)

The salient differences between Model I and Model II action strategies, is that in Model II, individuals openly illustrate their reasoning processes and are receptive to input and testing from others. Further, information is sought in a non-defensive, or productive way, in contrast with the defensive, less productive Model I strategist.

Model II reasoners supply hard data to illustrate their reasoning and welcome using an opposite line of reasoning, to validate or correct their own inferences. Model II represents productive reasoning by individuals not threatened by the need to correct their mistakes in thinking. We are told that when people learn what Model I and Model II activities are they typically work to develop competencies at the Model II level.

In working with corporate clients, for over 25 years, Argyris found the "... biggest progress has been and continues to be made at the top. This result is at variance with the results of many change programs in which the top managerial level is typically at the forefront of espousing change but not of producing it." (1993, 245)

Ladder of Inference

Most teaching that occurs in grade schools, even today, is focused teaching. In such teaching each subject area is presented as separate streams of data, with limited attention given to bridging connections between subject areas. Research suggests, that in essence, this teaching approach prevails throughout other adult learning environments. It is, therefore, not surprising that adults in the workforce do not comfortably approach reasoning and problem solving by first considering the whole problem in global terms.
In fact, a standard approach has been to define a problem first and then break it into discrete parts to be solved as independent tasks. While doing this has the advantage of easing into the problem, a common outcome is that people become vested in creating the best solutions for their own group, lose sight of the issue in its entirety, and driven by organizational politics become self-serving. Paul (1992) discusses an approach to problem solving that is quite different from what appears above and can be viewed as backing into the problem. "In real life there is no one order in which to take each step, I may begin with a vague sense of the problem which I do not thoroughly clarify until the end - after gathering facts, considering solutions, and so on. Defining the problem does not necessarily come first." (Paul, 1992, 70)

Based on several years of work experience in a corporate setting, it is my belief that in the workplace, people are routinely taught to gather data in support of their own position, or solution, without first taking an opposite point of view for testing purposes. This is true even in Quality meetings. Paul (1992) tells us, that unless we are able to sympathetically enter the thinking of another with an opposite point of view, we can never become fair-minded in our thinking.

According to the theoretical framework of Argyris, people reason in one of two ways in everyday life situations, either defensively or productively. The first method he labels "defensive" because the individual's premise is based on unexpressed causal explanations and inferences used to form conclusions. Further, and perhaps more important, evaluating actions or making attributions is done in ways that do not invite inquiry from others.
"Defensive reasoning is self-serving, anti-learning, and overprotective ..." (Argyris, 1993, 56). An example of commonplace defensive reasoning is when an individual states a conclusion, and claims that in order to test the conclusion, one must use the same line of reasoning as the one who originated the premise.

Defensive reasoners often use soft, rather than hard data as a basis for their premises and conclusions. An example of soft data is a conversation that is merely recalled and "... whose meanings are difficult to understand, especially by individuals with contrary views." (Argyris, 1993, 55)

Productive reasoning, on the other hand, is based on hard data: what individuals actually say and do, and meaning that is understood, even though individuals may hold contrary views. Individuals using productive reasoning: (1) supply "... directly observable data to illustrate the basis of the point being inferred (2) make all inferences explicit and (3) craft conclusions in ways that permit others to disconfirm them." (Argyris, 1993, 55)

None of the above occurs in defensive reasoning.

What Senge (1990) suggests, is that today's managers have more, rather than not enough, information than they need to make mindful decisions. While this may often be true, Paul (1992) reports that what is important in making decisions is multilogical thinking and reasoned judgment. This means coming to conclusions using multiple points of view, and reasoning hypothetically from the assumptions of another. (Paul, 310)

Further, Paul suggests that as humans we do not naturally welcome the opportunity to consider an insight from a position that is in opposition to our own. This is true even in situations where there is much to be gained by broadening one's perspectives.
The Ladder of Inference, (Figure 5) is an important tool in helping the user explore the reasoning process used in creating inferences. The hypothetical model was created by Chris Argyris to help users, in any setting, understand their Model I behavior by: (1) discussing the reasoning processes they use in everyday life situations, and (2) understand how they structure their belief system. Our individual belief systems are largely created through assumptions and reasoning processes that are not supported with solid evidence. We adopt our beliefs from our experiences, what we have observed, and sometimes from what we have been told to believe.

Argyris (1990) reports that we come to think that our beliefs are the truth, that the truth is based on real data, and the data we have selected are the real data. As Argyris puts it, the Ladder of Inference is "... a common mental pathway of increasing abstraction, often leading to misguided beliefs." (Senge, 1994, 243)

Each rung of the Ladder represents a step in the mental pathway: (1) the first rung of the ladder represents "direct and observable data" meaning, some occurrence which one can observe through the senses (2) the second rung represents Data selected from the whole experience (3) at the third rung data is interpreted and given Meaning (4) the fourth rung is where Assumptions are added to the Meaning (5) the fifth is where Conclusions are drawn (6) the sixth rung is where the Conclusions become integrated into a Belief (7) the seventh and final rung of the ladder is the point where Actions are taken, based on beliefs.

For example: I am an educator trying to introduce new substance abuse addiction counseling techniques I have learned about, but have not practiced, to paraprofessional
Ladder of Inference

I take ACTIONS based on my Beliefs.

I adopt BELIEFS about the World.

I draw CONCLUSIONS.

I make ASSUMPTIONS based on the meanings I have added.

I add MEANINGS (cultural and personal).

I select DATA from what I observe.

OBSERVABLE "data" and experiences (as a videotape recorder might capture it).

Adapted from The Fifth Discipline Fieldbook, 1994, Peter Senge, p.245

Figure 5
counselors who are themselves in recovery. The job of the counselors is to help addicts understand more about their debilitating disease and consider healthy alternatives for addressing their problems.

As I introduce the concepts, I observe people looking at each other and shifting in their seats, Rung 1. Then I am verbally attacked by Mary who states, that "Since you are not in recovery and have never walked in our shoes, we will stick to our own techniques!" In the culture of addicts this means "You're not one of us, and we do not trust you or your knowledge about treatment, especially since it is based on research rather than personal experience."

From this I think "You won't listen to me because I'm not in recovery", Rung 2. "Because I'm not an addict, you think that what I have to say is nonsense, or worse, rubbish", Rung 3. From this I infer that all addicts are ignorant and want to remain that way, Rung 4. Further, addicts refuse to let in new knowledge, particularly if is based on academic research, Rung 5.

By the time the meeting is over I am certain that all recovering addicts are pathetically smug and closed minded, Rung 5 and 6. Finally, I will quietly plot to wage a war to prove their counseling techniques are little more than venting sessions, Rung 7.

In those few minutes I climbed up Argyris' Ladder of Inference, (Figure 5) Observable data: attack from Mary, this would show up on a videotape or audio tape recording, or from others present; Details I selected: people shifting about in their seats, and looking at each other for affirmation that what I am saying is relevant; Meaning I added: they think my information is useless, and I'm incompetent; Conclusion: these
people are rigid and inflexible in their thinking. **Belief:** people in recovery are ignorant, closed minded and smug; **Actions:** I will plot against Mary to disconfirm the effectiveness of the group's counseling techniques.
CHAPTER IV

THE WORKSHOP

In this chapter I discuss the daily workshop activities and methods for the four day workshop designed to promote critical thinking on human resource issues. The times allotted for each activity represent the minimum amount of time facilitators should allow for each segment. I have erred on the side of overscheduling rather than omit important components to the overall learning goals of the workshop. In a setting where time is less of a constraint, facilitators are encouraged to spend more time on key activities and in whole group discussions to enrich the learning for participants.

Section 1 - Day One

Process: Introductions (20 Minutes) The objective of this exercise is for participants to become acquainted with the facilitators and with one another in anticipation of collaborating together, during and after the workshop.

Step 1. Each facilitator will introduce the other through a brief biography about corporate work and training experience, and one item of personal interest to the individual being introduced. Such an introduction accomplishes at least two goals: (1) it gives facilitators the opportunity to model collaboration and (2) it helps workshop attendees regard the facilitators as professional resources and colleagues.

Step 2. Everyone is asked to sit next to someone they do not know. Following the model of facilitators' introduction, each participant takes a turn interviewing and writing down information about the other. The information must include one item of
personal interest to each of them. Each person in turn, introduces his/her partner to the whole group.

**Process: Norms for Participants** (Five Minutes) The objective of this brief exercise is to clarify what is expected in terms of level of participation. (1) Be open and frank, and respectful of others' points of view. (2) Be involved and willing to take risks (3) Contribute to substantive discussions. (4) Be punctual for all activities. (5) Respect the confidentiality of all sensitive discussions.

**Process: Agenda Overview** (15 Minutes) The objective here is to present a comprehensive picture of what will be included in the entire workshop.

Step 1. The lead facilitator will explain the workshop goals and objectives, and give a brief overview of the agenda. Workshop Goals and Objectives, and Agenda are found in Appendix 1 and 2.

**Process: Expectations** (15 Minutes) Facilitators will seek to elicit and identify three types of expectations: (1) what insights people hope to glean from the workshop (beyond what appears in pre-workshop questionnaires) (2) what skills they hope to acquire and use by the end of the four sessions and (3) what level of effort people are prepared to apply.

Step 1. The group is asked to form into subgroups of four to talk about their learning expectations relative to the workshop goals and objectives. They are instructed to select one person from the small group to record this information on a flip chart, and report out to the large group. Facilitators will look for specificity from the group. Ten Minutes is allotted for small-group discussions and Five Minutes for reporting.
Lists of Expectations will be posted on the wall for reviewing purposes during the workshop, and again at the close of the workshop. Both facilitators will address each expectation, probe for meaning when a statement is unclear, and indicate when the scope of the expectation can not be met over the course of the four day workshop.

Note to facilitators: This exercise sets the tone for the workshop. Typically, managers have realistic notions of what can be accomplished in a workshop. Most do not expect a complete transformation in their thinking to occur, yet they do have measurable expectations. This is an opportunity for facilitators to gauge how insightful people are and how concrete they want to be in the course of the four days.

Learning Styles Inventory

Process: Learning Styles Inventory (80 Minutes) This activity presents participants with insight into their preferred approach to problem solving and that of others, as well as how their learning preferences impact their behaviors.

Step 1. A small group activity: the facilitator tells participants to imagine that they have been invited to take an exciting hot air balloon ride, over the Grand Canyon, all-expenses-paid. The only requirement on their part is that they must assemble the balloons that will arrive in boxes, via UPS. Directions for assembly are not included.

The group is divided into groups of five to work out a plan. Each group selects a person to record on a flip chart, each step of the planning process. Groups are encouraged to be as flexible as possible in their creating. After 15 Minutes, the group reconvenes and the recorder is asked to read, step by step, notes about the planning
process to the whole group. No comments are made by the facilitator at this time, except to tell the group they will return to the lists later.

Step 2. The facilitator will then pass out the LSI instrument; provide background information on the LSI, about its author David Kolb, and the people on which the research and instrument is based, briefly review the instructions with the group, and allow 10 minutes to complete Part I of the instructions and transfer their scores to the top of the following page. (See Appendix 3)

Break for 10 Minutes.

Step 3. At this time one facilitator will make use of a prepared flipchart illustration that graphically depicts the Learning Cycle activities, as found on page four of their LSI booklet and explain the meaning of the illustration. Allow Ten Minutes.

Note to facilitators: While using the LSI illustration as a way of characterizing learning, the facilitator will also provide anecdotal examples of how people go about learning to solve specific problems, or process new information.

Step 4. Get personal and work-related examples from the group, both in their own problem solving experiences, and what they have observed in their colleagues. Return to the hot-air balloon lists and briskly solicit input from the group to label the activities each team went through in solving the planning problem, using LSI terminology. Allow Ten Minutes.

Step 5. The group is asked to complete the rest of their Questionnaire: plotting a graph of their style. Each person is then asked to place his/her name in the proper place on an oversized graphic of the LSI model. Allow Five Minutes.
Step 6. The final part of this activity is to facilitate a group discussion based on the following questions. (1) What is indicated by being close to the center, where the vertical and horizontal axis intersect? (2) How would you go about forming a workteam, given what you now know about learning styles? (3) How would you describe the style needed to get the job done in your function? (4) What is the prevailing learning style found in your workgroup? (5) If jobs have learning profiles and your learning preference does not match that of your job, what are your options and (6) How can you enhance your problems solving skills? Allow Twenty Minutes.

Thinking Skills

Process: Thinking Skills (40 Minutes) The objectives of this activity is for group to be able to articulate what it means to think critically, creatively, and metacognitively and have an enhanced appreciation for the relationship between thinking skills and data found in the LSI.

Step 1. The group is asked to take a few minutes to write down on three separate sheets of paper, what they think critical thinking, creative thinking and metacognition mean. They will describe what happens behaviorally when someone is engaged in this kind of thinking. Group then breaks into sub groups to share how they defined the skills. They will record abbreviated statements on a separate and labeled flipchart, for each category, and be prepared to report and clarify each statement, with examples, to the large group. Allow Fifteen Minutes.

Step 2. When groups return, the charts are posted side by side, on the wall, definitions only. Allow Ten Minutes.
Step 3. Pass out Appendix 4. for the group to study and compare Paul's list with what appears on their collective flipcharts. Allow Ten Minutes.

Note to facilitators: This process needs to be led in a brisk yet thorough manner. The job of the facilitator here is to encourage people to question statements found on each group's list, look for similarities between the lists, and solicit examples from the group, when there are disagreements in definitions. Encourage and offer examples relevant to integrating new employees. Facilitate the bridging, and be sure there is consensus before moving on.

Step 3. Review the Learning Styles and ask the group what characteristics of thinking best link to each of the four learning styles. Allow Five Minutes.

Lunch Break for 60 Minutes.

Note to facilitators: Workshop participants frequently complain about not having enough opportunities in training sessions to discuss ideas in an informal and stress-free environment. The group is therefore encouraged to spend this time networking, relaxing, and exchanging ideas about the primary outcome of the workshop: to generate a Plan for integrating existing and transferred employees. Reporting back is not required.

Mental Models/Governing Values

Process: Mental Models/Governing Values (20 Minutes)

Step 1. Present in a lecture format the theoretical information which is found on pages 16 - 21 in Chapter II. Pass out copies of Figure 4. Allow Fifteen Minutes.

Step 2. Facilitator asks for examples of espoused values and governing values in the workplace to bridge to Senge's Model. Allow Five Minutes.
The Case of The Floundering Expatriate - Part One

Process: The Case of The Floundering Expatriate, Part One. (45 Minutes) The objectives in presenting this case study is to give participants an opportunity to think reflectively about problems that are open ended, with no right or wrong answer and increase one's level of comfort in working with issues that have a high degree of uncertainty and imprecise information.

Step 1. Facilitator passes out The Floundering Expatriate, Appendix 5., Harvard Business Review Case Study with the following written instructions: (1) Read the case study carefully. (2) Take four sheets of paper and label: (#1) What Went Wrong; (#2) Productive Behaviors, and Unproductive Behaviors; (#3) Governing Values; (#4) Comments to Bert and Frank. (3) Complete Part I only: sheets #1 and #2. (The remaining two sheets, Part II will be completed as homework.) Allow Fifteen Minutes.

Step 2. Form teams of three and take turns role playing Frank Waterhouse and Bert Donaldson while discussing #1 and #2 notes. Allow Fifteen Minutes.

Step 3. Return to large group and discuss in large group Part I. Allow Fifteen Minutes.

Note to facilitators: Participants should be urged to make this as credible as possible, using the values of honesty and fair-mindedness as their guide. Ask participants to put themselves in the roles of Frank Waterhouse, and Bert Donaldson and look at the issues from their point of view.

Process: Closing of Day One (15 Minutes) The goal of this activity is for participants to think about and share publicly, their overall impressions of how the day
was experienced, from a learning perspective.

Step 1. Quickly summarize what was covered in the course of the day by recapping the agenda and the key learnings of each activity, including homework and Part II of the case study.

*Note to facilitators:* This case study is the most critical learning tool of the workshop. The activities surrounding the case are significant in that it is here that participants will have repeated opportunities to test their own ability to think in a dialogical way, and to reflect on their own Model I and II values and behaviors. In an actual workshop setting, facilitators would watch for affirming behaviors and comments during the role play activity and the discussion that follows, as evidence that learning is taking place.

**Section II - Day Two**

**Process:** *Review Day One and Preview of Day Two* (15 Minutes) The objectives of this exercise are to reinforce participants' understanding of how exercises compliment each other and form the building blocks for subsequent learning.

Step 1. Review the key learning points of Learning Styles and Thinking Skills with the following questions. (1) What are the four learning styles defined by Kolb? (2) Identify the problem solving behaviors associated with a Converger? A Diverger? An Accommodator? An Assimilator? What learning styles are most prevalent in your groups? Give examples. (3) What can be done to enhance one's problem solving abilities? (4) How can a manager enhance his/her group's performance utilizing learning styles? The answers to the first three questions are in the LSI booklet. Allow Fifteen Minutes.
Step 2. Preview the Agenda for Day Two. Present an overview of what is to be covered on this day, and include goals and objectives for each exercise. Allow Five Minutes.

**Teaching Smart People How to Learn**

**Process:** *Teaching Smart People How to Learn* (30 Minutes) The objectives of this 1991 Harvard Business Review article by Chris Argyris are to discuss common defensive and self-imposed barriers to learning from failures, and to bridge to homework.

Step 1. Pass out for reading and discussion, Appendix 6, Excerpts from *Teaching Smart People How to Learn*. Allow Ten Minutes for reading and Twenty Minutes for discussing the following: (1) can you give of think of a situation when you felt helpless to act differently - and blamed the situation on the limitations of another, rather than yourself? (2) how do you respond to such a situation with an employee?

**Note to facilitators:** Solicit input based on examples from work experiences, present and past, and ask how their thinking was changed as a result. One response may be about issues concerning office politics. Encourage thinking from the point of view of another. Another key component of the workshop is to give participants the opportunity to understand parallels between the important points of the article and observations and experiences they have had at their work site.

**The Case of The Floundering Expatriate - Part Two**

**Process:** *The Case of The Floundering Expatriate - Part Two*. (35 Minutes) The learning objectives here are to diagnose the case study for theories-in-use, and deepen understanding of the role that governing values play in our behaviors.
Step 1. Divide group in thirds for small-group discussions about Part II of the homework questions: (#3) Governing Values and (#4) Comments to Bert and Frank. Each group has a scribe who will write data on flipchart and report to whole group. Allow Twenty Minutes.

Step 2. Facilitator will ask for participants observations regarding commonalities of governing values, how comments can be transformed into concrete behaviors and what thinking skills were used in their decision-making process. Second facilitator will label sheets appropriately, log input from the group, and post. Allow Fifteen Minutes.

Break for 15 Minutes.

Ladder of Inference

Process: Ladder of Inference (40 Minutes) The objective of this activity is to encourage participants to examine their own methods of reasoning.

Step 1. Open discussion by asking the following questions. (1) How do we learn to reason? (2) How do we approach problem solving? (3) Can you describe at least one concrete example of problem solving techniques? Input from participants is written on flipchart. Allow Fifteen Minutes.

Step 2. Pass out Ladder of Inference, Figure 5, for discussion and ask: (1) How does this Ladder match to your personal system of inferencing? Ask for examples from the class. Allow Ten Minutes.

Step 3. Pass out copy of Appendix 7, which is an example of examining inferences. Ask for comments from the group regarding how this process can be applied
when creating a strategy for integrating new employees into the organization? Allow Fifteen Minutes.

Lunch Break for 60 Minutes.

Scripting a Conversation

Process: Scripting a Conversation (55 Minutes) The learning objective in this exercise is for participants to use a method of exposing underlying assumptions, and increase one's awareness of Model I behavior.

Step 1. Participants are asked to recall a recent conversation they have had with another in which they clearly made inferences that may or may not be correct.

Step 2. Take a sheet of paper, and write the word Situation, then write a paragraph or two describing the situation. Beneath that, write Issue and write a paragraph describing what you perceived to be the issue. Finally write Strategy and write a statement or two describing your approach to settling the Issue. Allow Fifteen Minutes.

Step 3. Take a second sheet of paper and divide in half vertically and label the right column Actual Conversation and the left column My Unspoken Thoughts. Fill in the two columns as accurately as possible. Allow Fifteen Minutes.

Step 4. Pair up with another person and discuss what each has written, and together label the Thoughts columns, according to the seven rungs on the Ladder of Inference. Allow Twenty Minutes.

Step 5. In the large group the facilitator will generate a discussion regarding what people found useful, or not useful, about the exercise. Allow Five Minutes.
Note to facilitators: This activity is another critical exercise of the workshop. My hope is that upon reflection, and through discussions, participants will draw insightful connections between the case study which clearly points to defensive reasoning, the excerpts about how smart people protect their own limitations, and scripting a personal situation to assess their own thinking and reasoning.

Process: Homework Assignment/Team Meeting (15 Minutes) The learning objective in this assignment is that participants will work in teams, and in doing so will develop or enhance working relationships, and perceive peers as problem solving resources. This assignment creates a foundation for the Plan.

Step 1. Participants schedule a meeting with two others from the workshop to discuss a strategy for identifying skills of new and displaced employees, and how best to integrate these employees into the organization. Allow Five Minutes.

Step 2. Explain directions: Each participant will record everything that is discussed at the meeting. Based on the teams' discussions, each person will write his/her own paragraph describing a meeting they will schedule with either their manager or their subordinates, to discuss integrating new employees and what they hope to accomplish. Participants will then divide sheet(s) of paper in half and write a script or dialogue on one side of the sheet, and their own unexpressed feelings on the other side. (See Appendix 7.) Allow Ten Minutes.

Process: Summarize Day Two (15 Minutes)

Step 1. Have participants form groups of three and discuss what the day's activities mean to them and the value of the experience in their work setting. This is done
without consulting their handouts or notes. The groups reconvene and members from each group report what their team found to be most thought provoking about the day and enhancing to their role as managers. Allow Ten Minutes.

Section III - Day Three

**Process:** Review of Day Two and Preview of Day Three (20 Minutes) The objectives here are to reinforce value of reflective thinking and examining one's assumptions through careful scripting and the Ladder of Inference homework. Review the usefulness of the exercise, and the value of being aware of one's assumptions, and the governing values that drive behaviors.

Step 1. Facilitator gets general feedback from whole group regarding challenges of scripting and identifying inferences by asking the following questions. (1) Can you think of a time, in the workplace, when using scripting will help in problem solving?

*Note to facilitators:* This exercise has many applications and managers are encouraged to apply this methodology in problem solving and when working with new employees on a range of issues, including helping them to identify their skill-base.

**Team Discussions**

**Process:** Team Discussions (60 Minutes) The objectives of this activity is for participants to articulate linkages in reasoning from the concrete to the abstract, make one's thinking visible to others, and learn to discuss tacit assumptions more effectively. This forms the structure for a comprehensive Plan.

Step 1. Team members pass out copies of their scripts and ladders to the team and discuss each one separately in a reflective and meaningful way. People are encouraged to
look at the data and work to provide evidence regarding how their inferences were formed. Facilitators sit with teams to observe the process. Allow Sixty Minutes.

**Process:** *Whole Group Discussion* (60 Minutes) Participants learn how other teams and individuals experienced the exercise through two-way sharing, and by providing evidence to support their reasoning processes.

Step 1. Facilitators work together with whole group and record feedback to the following questions: (1) What did you learn from the experience that you did not anticipate? (2) Upon reflection, what prevented you from stating to your team, what later appeared in your left-hand column? (3) Any ideas how the Ladder of Inference and Scripting process can be used in creating a Plan? Allow Sixty Minutes.

**Working Lunch for Two Hours.**

**Creating a Strategy Plan**

**Process:** *Creating a Strategy Plan* The objectives are for participants to generate a model integration strategy document, in outline form.

Step 1. The group is split in half; both groups are asked to create a boilerplate document for reporting out to the whole group. The following general questions are provided to everyone as a way of getting the groups started. See Appendix 8. (1) What are my goals? (2) What do I hope to accomplish with new employees? (3) How can I find out where their unused skills and interest lie? (4) What kind, and level of support is needed from upper management? (5) Who are my advocates? (6) What barriers to implementation am I likely to experience? (7) What goals, action plans, and measurables are necessary to make this process concrete?
Process: **Discuss Plans** (60 Minutes) Agree on a single basic model. Models may vary with enhancements unique to any one group or organization.

**Process:** **Day Three Review and Closing.** (10 Minutes)

### Section IV - Day Four

**Post-Workshop Questionnaire - Part One**

**Process:** 1. **Post-Workshop Questionnaire - Part One** (20 Minutes) The objectives here are to (1) find out what people have learned through the course of the three sessions (2) learn which content areas stand out as effective learning processes and (3) which areas of the workshop need to be strengthened, and made more applicable to the work setting.

Step 1. Hand out Questionnaire and collect after allotted time. (See Appendix 10.)

*Note to facilitators:* Do not comment on the questionnaire feedback at this time.

**Individual Presentations**

**Process:** **Individual Presentations** (Total Five Hours) This timeframe is based on a 15 minute presentation each, for a group of 15 participants. The objectives are that (1) participants have an opportunity to evaluate the Plans of others, with an eye to enhancing their own Plan (2) participants have an opportunity to give and receive, written and verbal feedback with peers and (3) participants apply reflective thinking skills and the Ladder of Inference awareness as a part of the feedback process.

This following process will be followed by each presenter.

Step 1. Group is split into teams of three, and all teams remain in the room as each person makes their presentation to the whole group.
Step 2. Each person will give a 15 minute presentation of their final draft Plan for presenting to their managers. This will be done in the form of a written, verbal and visual presentation with copies for all participants.

Step 3. After each presentation the individual team members, among themselves, share their responses to the content and form of the Plan and take a few minutes to write comments to the presenter. Participants make supportive responses as well as more distanced and objective comments. Allow Ten Minutes per person.

Step 4. Each person will answer the following questions in a written evaluation to the presenter: (1) What in my Plan appears to be fail-safe? (2) What in the Plan needs to be strengthened? (3) What advice do you have regarding my Plan? Allow Five Minutes.

Step 5. Facilitators will collect and compile the written feedback from the group.

Step 6. Facilitators will give to each presenter, the written feedback from the rest of the group. Facilitators may offer written assessment to the participants.

Note to facilitators: Be rigorous about the time allotted to each presenter. It is important that every participant begin and end on time. Do not allow any one to monopolize. Be protective of the presenter during the presentation and later during the verbal feedback time. Be mindful of the fact that it is difficult for peers to make presentations to each other and to be assessed publicly. Keep the group focused and push for clarity on unclear comments or questions during the feedback segment.

Process: Schedule Follow-up Meetings (10 Minutes) The objectives are to have participants share their implementation status and experiences with workshop colleagues, problem solve with them and invite "outsiders" to join the meetings, as a way of
introducing the concepts to them.

Step 1. Schedule three half-day meetings at two month intervals. Workshop facilitators attend the meetings as a show of support and to help by moderating when requested.

Post-Workshop Questionnaire - Part Two

**Process:** Post-Workshop Questionnaire - Part Two (10 Minutes)

Step 1. Participants complete the second part of the workshop evaluation.

**Process:** Workshop Closing (15 Minutes) The objective here is that participants will identify the most effective parts of the workshop and the parts which need to be enhanced. A social gathering may follow as an informal celebration.

Step 1. Facilitator will quickly review the expectations from Day One and ask the writer of each one to assess the degree to which the expectation was met.

*Note to facilitators:* While a reasonably thorough reflection on the patterns of the workshop's successes and omissions is the goal, it is important to leave the workshop with a hopeful attitude, anticipating implementing what has been learned and having the continued support of other workshop participants in this effort.
EVALUATION AND REFLECTIONS

In this chapter I conclude by describing my construction of and the rationale for the questionnaire used to evaluate workshop success, and offer a final reflection about my own work experience with downsizing.

Evaluation: The goal of the evaluation is to measure the level of comprehension of key concepts. To that end, I designed a questionnaire of open-ended items to elicit forthright and self-constructed responses to questions on thesis themes. The first theme or pattern evaluated was content knowledge of critical thinking, and governing values and behaviors. For example I asked "Attempt a brief definition of critical thinking and list several characteristics associated with critical thinking", and "Describe your understanding of governing values and behaviors of Model I and II, and explain how this knowledge can be applied when creating an integration Plan. A second theme of inquiry was problem solving and decision making, and the third theme was metacognitive reflection on the change process in the organization and the consequences of the method chosen for this. I asked, "To what extent should employees be involved in the problem solving and decision making process?" and "In the context of integrating employees into the organization, what were the most enlightening parts of the workshop?"

In reading participant responses, I will look for evidence that they understand how to engage their employees in coaching and the re-integration process. I will also look for
evidence of their understanding of problem solving especially as it relates to ongoing change and downsizing.

Reflections: As I developed the workshop I continually tested myself regarding relevancy of material and the transfer process. Over a period of time the thesis took on a life of its own. I knew thematically what I wanted to include in the workshop, but as my research continued, I found that making decisions about when to stop became a struggle. The field is rich with research-based writing about employee development, downsizing, and change management.

In the process of developing the workshop, it became clear to me that the material presented was more than enough for participants to absorb in such a short period of time. Having worked in corporate training functions, I know the standard practice is to move the group through the training material quickly, in a brisk manner. The rationale for this is that adult learners are capable of grasping the concepts quickly, that they will internalize relationships between the parts to the whole gradually over time, and finally, that people can't afford to spend a lot of time away from their work site ruminating over workshop content.

While all this may be true to some degree, it is my belief that since my workshop is essentially about thinking habits, learners would be far better off spending more time, rather than less, reflecting over abstract concepts. I am most interested in having participants understand the "know-why" (Kim, p. 38) of underlying problems in the workplace and how to question themselves and others, as systems thinkers or "symbolic analysts." (Reich, p. 231)
The use of time is generally a matter of great concern in work environments, yet in looking to the future, I can imagine the four-day workshop being expanded by adding another day or two, over a period of weeks. It could be offered as a fluid long-term training effort where each topic is enhanced as an independent unit and would be studied in-depth before moving on to the next topic. In this way, participants internalize the key learning points at a deeper level before moving on. Coaching would play a major role in the way the material is presented with emphasis on system thinking. As Reich reminds us "The education of the symbolic analyst emphasizes system thinking. Rather than teach students" (in my case managers) "how to solve a problem that is presented to them, they are taught to examine why the problem arises and how it is connected to other problems. Learning how to travel from one place to another by following a prescribed route is one thing; learning the entire terrain so that you can find shortcuts to wherever you may want to go is quite another." (p. 231)

In Chapter I, I briefly commented on my experience in being part of a high-tech corporate downsizing effort after nearly 10 years on the job; I actually experienced two such events in my life, the first as a tenured classroom teacher. In both cases, I felt passionate about my job because I was able to generate many opportunities to be creative and inventive in the context of my daily work. In my high-tech function, I was part of a high-performance AI training team. High-performance here means that team members, under the leadership of a coach-manager, define the group's mission and vision and continually demonstrate the meaning of working collaboratively in a supportive and
collegial setting. As a team, we were continually coached and trained in the ways of system thinking. This is a legacy I take from this position.

I raise this now because I believe that the principles of coaching, and developing high-performance teams, are two important areas of management development which need to be introduced aggressively into corporate training organizations. Research tells us that when downsizing takes place it negatively impacts work-teams, social interaction, motivation on the job and trust of senior management. Therefore, the underlying structure of teams, and their development, deserve an appropriate level of attention from management.

Teresa Amabile of Harvard University and Regina Conti of Colgate University together researched the effects of corporate downsizing on creativity. They found that employees left behind reported feeling angry, depressed, worried, and defeated in their work. Although no quick solutions are given to offset low morale, they do offer three important suggestions: don't downsize unless it is unavoidable, communicate with employees quickly and honestly, and maintain intact work-groups if possible, if not, implement team building efforts. (Amabile, 1995)

As one who has both studied and experienced downsizing, I strongly support these recommendations as procedures which will not only facilitate the renewal of employees remaining but provide downsized individuals with an opportunity to function with dignity and self esteem intact.
Appendix 1.

Workshop Goals and Objectives

Goals

1. Participants will examine critical thinking as it relates to organizational changes and the consequences of change in the integration of employees into new positions in the corporation.

2. Participants will examine critical thinking as it relates to the problems associated with the integration of displaced employees.

3. Participants will produce a model for strategies to integrate new employees into the company.

Objectives

1. Understand the managerial issues of integrating new employees who come into the corporation, as a result of an acquisition, or merger.

2. Create a strategy that involves people and process as the vehicle for effective problem solving, in this context.

3. Understand the professional and personal value of being part of a joint community of problem solvers, in the organizational context.

4. Know how to work across functions to help drive a well thought-out plan for change at the management level.
Appendix 2.

Agenda

Day One

Introductions
Norms for Participants
Agenda Overview
Expectations

Learning Styles Inventory

Thinking Skills

Lunch Break

Mental Models/Governing Values

The Case of The Floundering Expatriate - Part One

Closing of Day One

Day Two

Review of Day One and Preview of Day Two

Teaching Smart People How to Learn

The Case of The Floundering Expatriate - Part Two

Ladder of Inference

Lunch Break

Scripting a Conversation

Homework Assignment/Team Meeting

Summarize Day Two

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Agenda (continued)

**Day Three**

Review of Day Two and Preview of Day Three

Team Discussions

Whole Group Discussion

Working Lunch for Two Hours

Creating a Strategy Plan

**Day Four**

Post-Workshop Questionnaire - Part One

Individual Presentations

Working Lunch for Two Hours

Schedule Follow-up Meetings

Post-Workshop Questionnaire - Part Two

Workshop Closing
Learning-Style Inventory

The Learning-Style Inventory describes the way you learn and how you deal with ideas and day-to-day situations in your life. We all have a sense that people learn in different ways, but this inventory will help you understand what learning style can mean to you. It will help you understand better:

- how you make career choices
- how you solve problems
- how you set goals
- how you manage others
- how you deal with new situations

Instructions

On the next page you will be asked to complete 12 sentences. Each has four endings. Rank the endings for each sentence according to how well you think each one fits with how you would go about learning something. Try to recall some recent situations where you had to learn something new, perhaps in your job. Then, using the spaces provided, rank a "4" for the sentence ending that describes how you learn best, down to a "1" for the sentence ending that seems least like the way you would learn. Be sure to rank all the endings for each sentence unit. Please do not make ties.

Example of completed sentence set:

C. When I learn, I am

4. I am happy.
1. I am fast.
2. I am logical.
3. I am careful.

REMEMBER: 4 = most like you
3 = second most like you
2 = third most like you
1 = least like you

AND: You are ranking across, not down.
## Learning-Style Inventory

<table>
<thead>
<tr>
<th>Description</th>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
<th>Column 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When I learn:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I learn best when:</td>
<td></td>
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<tr>
<td>3. When I am learning:</td>
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<tr>
<td>4. I learn by:</td>
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<tr>
<td>5. When I learn:</td>
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<td>6. When I am learning:</td>
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<td>7. I learn best from:</td>
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<td>8. When I learn:</td>
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<tr>
<td>9. I learn best when:</td>
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<td>10. When I am learning:</td>
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<tr>
<td>11. When I learn:</td>
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<tr>
<td>12. I learn best when:</td>
<td></td>
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</tr>
</tbody>
</table>

**TOTAL the scores from each column:**

- Column 1
- Column 2
- Column 3
- Column 4

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The four columns that you have just totaled relate to the four stages in the Cycle of Learning from Experience. In this cycle are four learning modes: Concrete Experience (CE), Reflective Observation (RO), Abstract Conceptualization (AC), and Active Experimentation (AE). Enter your total scores from each column:

Column 1 (CE): D
Column 2 (RO): D
Column 3 (AC): D
Column 4 (AE): D

In the diagram below, put a dot on each of the lines to correspond with your CE, RO, AC, and AE scores. Then connect the dots with a line so that you get a "kite-like" shape. The shape and placement of this kite will show you which learning modes you prefer most and which you prefer least.

The Learning-Style Inventory is a simple test that helps you understand your strengths and weaknesses as a learner. It measures how much you rely on four different learning modes that are part of a four-stage cycle of learning. Different learners start at different places in this cycle. Effective learning uses each stage. You can see by the shape of your profile (above) which of the four learning modes you tend to prefer in a learning situation.

On the next page are explanations of the different learning modes.
The Four Stages of the Learning Cycle and Your Learning Strengths

CONCRETE EXPERIENCE (CE)
This stage of the learning cycle emphasizes personal involvement with people in everyday situations. In this stage, you would tend to rely more on your feelings than on a systematic approach to problems and situations. In a learning situation, you would rely more on your ability to be open-minded and adaptable to change.

REFLECTIVE OBSERVATION (RO)
In this stage of the learning cycle, people understand ideas and situations from different points of view. In a learning situation you would rely on patience, objectivity, and careful judgment but would not necessarily take any action. You would rely on your own thoughts and feelings to form opinions.

ABSTRACT CONCEPTUALIZATION (AC)
In this stage, learning involves using logic and ideas, rather than feelings, to understand problems or situations. Typically, you would rely on systematic planning and develop theories and ideas to solve problems.

ACTIVE EXPERIMENTATION (AE)
Learning in this stage takes an active form—experimenting with influencing or changing situations. You would have a practical approach and a concern with what really works, as opposed to watching a situation. You value getting things done and seeing the results of your influence and ingenuity.

REMEMBER:
1. The LSI gives you a general idea of how you view yourself as a learner.
2. Because learning is a cycle, the four stages occur time after time. Often in a learning experience you may have to go through the cycle several times.
3. The LSI does not measure your learning skills with 100% accuracy. You can find out more about how you learn by gathering information from other sources—your friends, instructors, and co-workers.

Learning Style

From the preceding descriptions of Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation, you may have discovered that no single mode entirely describes your learning style. This is because each person's learning style is a combination of the four basic learning modes. Because of this, we are often pulled in several directions in a learning situation. By combining your scores, you can see which of four learning-style types best describes you. They are named as follows:

- Accommodator
- Diverger
- Converger
- Assimilator

Understanding your learning style type—its strengths and weaknesses—is a major step toward increasing your learning power and getting the most from your learning experiences.
Take your scores for the four learning modes, AC, CE, AE, and RO, listed on page 4, and subtract as follows to get your two combination scores:

$$\text{AC} - \text{CE} = \text{AC} - \text{CE}$$
$$\text{AE} - \text{RO} = \text{AE} - \text{RO}$$

A positive score on the AC–CE scale indicates that your score is more abstract. A negative score on the AC–CE scale indicates that your score is more concrete. Likewise, a positive or negative score on the AE–RO scale indicates that your scores are either more active or more reflective.

By marking your two combination scores, AC–CE and AE–RO, on the two lines of the following grid and plotting their point of intersection, or data point, you can find which of the four learning styles you fall into. These four quadrants, labeled Accommodator, Diverger, Converger, and Assimilator, represent the four dominant learning styles.

The quadrant of the Learning-Style Type Grid into which your data point falls shows your preferred learning style. For example: If your AC–CE score was -8 and your AE–RO score was +15, your style would fall into the Accommodator quadrant. An AC–CE score of +7 and an AE–RO score of +10 would fall into the Converger quadrant. The closer the data point is to the center of the grid, the more balanced is your learning style. If the data point falls near any of the far corners of the grid, you tend to rely heavily on one particular learning style.
The Four Learning-Style Types

CONVERGER
Combines learning steps of ABSTRACT CONCEPTUALIZATION and ACTIVE EXPERIMENTATION

People with this learning style are best at finding practical uses for ideas and theories. If this is your preferred learning style, you have the ability to solve problems and make decisions based on finding solutions to questions or problems. You would rather deal with technical tasks and problems than with social and interpersonal issues. These learning skills are important to be effective in specialist and technology careers.

DIVERGENT
Combines learning steps of CONCRETE EXPERIENCE and REFLECTIVE OBSERVATION

People with this learning style are best at viewing concrete situations from many different points of view. Their approach to situations is to observe rather than take action. If this is your style, you may enjoy situations that call for generating a wide range of ideas, as in a brainstorming session. You probably have broad cultural interests and like to gather information. This imaginative ability and sensitivity to feelings is needed for effectiveness in the arts, entertainment, and service careers.

ASSIMILATOR
Combines learning steps of ABSTRACT CONCEPTUALIZATION and REFLECTIVE OBSERVATION

People with this learning style are best at understanding a wide range of information and putting it into concise, logical form. If this is your learning style, you probably are less focused on people and more interested in abstract ideas and concepts. Generally, people with this learning style find it more important that a theory have logical soundness than practical value. This learning style is important for effectiveness in information and science careers.

ACCOMMODATOR
Combines learning steps of CONCRETE EXPERIENCE and ACTIVE EXPERIMENTATION

People with this learning style have the ability to learn primarily from “hands-on” experience. If this is your style, you probably enjoy carrying out plans and involving yourself in new and challenging experiences. Your tendency may be to act on “gut” feelings rather than on logical analysis. In solving problems, you may rely more heavily on people for information than on your own technical analysis. This learning style is important for effectiveness in action-oriented careers such as marketing or sales.

1 The Learning-Style Inventory is based on several theories of thinking and learning. It is reflected in the triarchonomy of Converger, Diverger, and Accommodator. The triarchonomy is the balance between the processes of adjusting concepts to the external world (accommodation) and the processes of fitting observations of the world into existing concepts (assimilation). Convergence and divergence are the two essential creative processes identified by J. P. Guilford's structure of intellect model.
The Importance of Understanding Your Learning Style

The ability to learn is the most important skill you can acquire. We are often confronted with new experiences or learning situations in life, in our careers, or on the job. In order to be an effective learner you have to shift — from getting involved (CE) to listening (RO) to creating an idea (AC) to making decisions (AE). As an adult, you have probably become better at some of these learning skills than others. You tend to rely on some skills and steps in the learning process more than others. As a result you have developed a learning style.

Understanding your learning style helps you become aware of your strengths in some steps of the learning cycle. One way you can improve your learning effectiveness is to use those strengths when you are called upon to learn. More important, you can increase your effectiveness as a learner by improving your use of the steps you underuse.

Another way of understanding your learning style is to see how closely related it is to:

• choosing career
• problem solving
• managing people
• working as part of a team

On the following pages, you will:

• see how problem solving relates to learning styles
• learn how to strategize to improve your learning skills
• find out which careers are closely related to certain learning styles

Using the Learning Cycle to Help Solve Problems

Understanding your learning style can make you an effective problem solver. Nearly every problem that you encounter on the job or in your life involves the following skills:

• identifying the problem
• selecting the problem to solve
• seeing different solutions
• evaluating possible results
• implementing the solution

Different pieces of the problem must be approached in different ways. Look back at your strengths and weaknesses in the four learning modes. Compare them with the problem-solving model illustrated below. If you rely heavily on Concrete Experience, you may find that you can easily identify problems that need to be worked on or solved. However, you may need to increase your ability to evaluate possible solutions, as in Abstract Conceptualization. Or you may find that your strong points rest with carrying out or implementing solutions, as in Active Experimentation. If this is so, you may need to work on carefully selecting the problem, as in Reflective Observation.
Comparison of the Learning Cycle with Problem-Solving Skills

In the next section you will find some strategies to help you develop your learning skills.
Improving Your Learning and Problem-Solving Skills

You can improve your ability to learn and solve problems in three ways:
1. Develop learning and work relationships with people whose learning strengths and weaknesses are opposite to yours.
2. Improve the fit between your learning-style strengths and the kinds of learning and problem-solving experiences you face.
3. Practice and develop learning skills in your areas of weakness.

FIRST STRATEGY

Develop supportive relationships. This is the easiest way to improve your learning skills. Recognize your own learning-style strengths and build on them. At the same time, value other people's different learning styles. Also, don't assume that you have to solve problems alone. Learning power is increased by working with others. Although you may be drawn to people who have similar learning styles, you'll learn better and experience the learning cycle more fully with friends and co-workers of opposite learning skills.

How? If you have an abstract learning style, like a Converger, you can learn to communicate ideas better by associating with people who are more concrete and people-oriented—like Divergers. A person with a more reflective style can benefit from observing the risk taking and active experimentation of someone more active—like an Accommodator.

SECOND STRATEGY

Improve the match or fit between your learning style and your life situation. This is a more difficult way to achieve better learning performance and life satisfaction.

How? There are a number of ways to do this. For some people, this may mean a change of career or job, or a move to a new field where they feel more at home with the values and skills required of them. Most others can improve the match between their learning style and task by reorganizing their priorities and activities. They can concentrate on those tasks and activities that lie in their areas of learning strength and rely on other people in their areas of learning weakness.

THIRD STRATEGY

Become a flexible learner. You can do this by developing your learning weaknesses. This strategy is the most challenging, but it can be the most rewarding. By becoming flexible, you will be able to cope with problems of all kinds. And, you will be more adaptable in changing situations. Because this is harder, it involves more time and tolerance for your own mistakes and failure.

How?
1. Develop a long-term plan. Look for improvements and payoff over months and years, rather than right away.
2. Look for safe situations to practice. Find situations that test your new skills but will not punish you for failure.
3. Reward yourself—it's hard work.
The chart below pinpoints the strengths and weaknesses of each learning style with notes for improvement.

**ACCOMMODATOR**

**Strengths:**
- Getting things done
- Leadership
- Risk Taking

**Too much:**
- Trivial improvements
- Meaningless activity

**Too little:**
- Work not controlled on time
- Not directed to goals

**DIVERGER**

**Strengths:**
- Imaginative ability
- Brainstorming
- Recognizing problems

**Too much:**
- Paralyzed by alternatives
- Can’t make decisions

**Too little:**
- No ideas
- Can’t recognize problems and opportunities

**To develop your Accommodative learning skills, practice:**
- Committing yourself to objectives
- Being sensitive to people’s feelings
- Seeking new opportunities
- Listening with an open mind
- Influencing and leading others
- Being personally involved
- Gathering information
- Dealing with people
- Being sensitive to values
- Listening with an open mind
- Being sensitive to values
- Influencing and leading others
- Being personally involved
- Gathering information
- Dealing with people

**Active Experimentation**

**CONVERGER**

**Strengths:**
- Problem solving
- Decision making
- Deductive reasoning
- Defining problems

**Too much:**
- Solving the wrong problem
- Hasty decision making

**Too little:**
- Lack of focus
- No testing of ideas
- Scattered thoughts

**ASSIMILATOR**

**Strengths:**
- Planning
- Creating models
- Defining problems
- Developing theories

**Too much:**
- Castles in the air
- No practical application

**Too little:**
- Unable to learn from mistakes
- No sound basis for work
- No systematic approach

**Reflective Observation**

**Abstract Conceptualization**

**To develop your Convergent learning skills, practice:**
- Creating new ways of thinking and doing
- Experimenting with new ideas
- Choosing the best solution
- Setting goals
- Analyzing quantitative data
- Designing experiments
- Testing theories and ideas
- Organizing information
- Building conceptual models
- Setting goals
- Creating new ways of thinking and doing
- Experimenting with new ideas
- Choosing the best solution
- Setting goals
- Analyzing quantitative data
- Designing experiments
- Testing theories and ideas
- Organizing information
- Building conceptual models
- Setting goals
- Creating new ways of thinking and doing
- Experimenting with new ideas
- Choosing the best solution
- Setting goals
- Analyzing quantitative data
- Designing experiments
- Testing theories and ideas
- Organizing information
- Building conceptual models
Review the Career Map below. See how well your learning style matches your job.

**Concrete Experience**

**AROMMODATOR**

**CAREERS IN ORGANIZATIONS**

**Fields:**
- Management
- Public Administration
- Educational Administration
- Banking

**Jobs:**
- Accountant
- Manager
- Supervisor
- Administrator

**CAREERS IN BUSINESS AND PROMOTION**

**Fields:**
- Marketing
- Government
- Business
- Retail

**Jobs:**
- Salesperson/Retailer
- Politician
- Public Relations Specialist
- General Manager

**DIVERGER**

**CAREERS IN ARTS AND ENTERTAINMENT**

**Fields:**
- Literature
- Theater
- Television
- Journalism

**Jobs:**
- Actor/Actress
- Athlete
- Artist
- Designer

**CAREERS IN SERVICE ORGANIZATIONS**

**Fields:**
- Social Work
- Psychology
- Police
- Nursing

**Jobs:**
- Counselor/Therapist
- Social Worker
- Personnel Manager
- Planner
- Management Consultant

**Active Experimentation**

**CONVERGERS**

**CAREERS AS SPECIALISTS**

**Fields:**
- Mining
- Farming
- Forestry
- Economics

**Jobs:**
- Civil Engineer
- Chemical Engineer
- Production Supervisor

**CAREERS IN TECHNOLOGY**

**Fields:**
- Engineering
- Medicine
- Computer Science
- Physical Science

**Jobs:**
- Physician
- Engineer
- Computer Programmer
- Medical Technician
- Applied Scientist
- Industrial Salesperson

**ASSIMILATOR**

**INFORMATION CAREERS**

**Fields:**
- Education
- Ministry
- Sociology
- Law

**Jobs:**
- Teacher
- Writer
- Librarian
- Minister
- College Professor

**CAREERS IN SCIENCE**

**Fields:**
- Mathematics
- Physical Science
- Biology

**Jobs:**
- Planner
- R & D Scientist
- Academic Physicist
- Researcher
- Financial
Resources for Further Study

Experiential Learning: Experience as the Source of Learning and Development
The theory of experiential learning, with applications to education, work, and personal development. Contains information on the validity of the Learning Style Inventory.

User Guide for the Learning-Style Inventory
A manual for teachers and trainers.

Personal Learning Guide
A practical guide to increasing one's learning from a training program or course of study. Includes the Learning-Style Inventory. Available in training and college editions.

Bibliography of Research on Experiential Learning and the Learning-Style Inventory
References to recent studies.
Appendix 4.

Critical Thinking Skills

1. Refining generalizations and avoiding over-simplifications.
2. Comparing analogous situations: transferring insights into new contexts.
3. Developing one's perspective: creating or exploring the implications of beliefs, arguments or theories.
4. Clarifying issues, conclusions or beliefs.
5. Clarifying and analyzing the meaning of words and phrases.
7. Evaluating the credibility of sources of information.
8. Questioning deeply: raising and pursuing root or significant questions.
9. Analyzing or evaluating arguments, interpretations, beliefs, or theories.
10. Generating or assessing solutions.
11. Analyzing or evaluating actions or policies.
12. Reasoning dialogically: comparing perspectives, interpretations, or theories.
14. Reading critically: evaluating perspectives, interpretations, or theories.
15. Listening critically: constructing an accurate interpretation of understanding the elements of thought in, and evaluating, the reasoning of a text.
16. Writing critically: creating, developing, clarifying, and conveying, in written form, the logic of one's thinking.
17. Speaking critically: creating, developing, clarifying, and conveying, in spoken form, the logic of one's thinking.

Adapted from Critical Thinking by Richard Paul, 1992, p. 107

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Appendix 5.

At exactly 1:40 on a warm, sunny Friday afternoon in July 1995, Frank Waterhouse, CEO of Argos Diesel Europe, leaves his office on the top floor of the Argos Tower, overlooking the Zurichsee. In the grip of a tension headache, he rides the glass elevator down the outside of the mirrored building.

To quiet his nerves, he studies his watch. In less than half an hour, Waterhouse must look on as Bert Donaldson faces the company’s European managers—executives of the part suppliers that Argos has acquired over the past two years. Donaldson is supposed to give the keynote address at this event, part of the second Argos Management Meeting organized by his training and education department. But late yesterday afternoon, he phoned Waterhouse to say he didn’t think the address would be very good. Donaldson said he hadn’t gotten enough feedback from the various division heads to put together the presentation he had planned. His summary of the company’s progress wouldn’t be what he had hoped.

It’s his meeting! Waterhouse thinks, as the elevator moves silently down to the second floor. How could he not be prepared? Is this really the man who everyone at corporate headquarters in Detroit thinks is so fantastic?

Waterhouse remembers his introduction to Donaldson just over a year ago.

Argos International’s CEO and chairman, Bill Loun, had phoned Waterhouse himself to say he was sending the “pick of the litter”. He said that Donaldson had a great international background—that he had been a professor of American studies in Cairo for five years. Then he had returned to the States and joined Argos. Donaldson had helped create the cross-divisional, cross-functional teams that had achieved considerable cost reductions and quality improvements.

Loun had said that Donaldson was just what Argos Europe needed to create a seamless European team—to facilitate communication among the different European parts suppliers that Waterhouse had worked so hard to acquire. Waterhouse had proved his own strategic skills, his own ability to close deals, by successfully building a network of companies in Europe under the Argos umbrella. All the pieces were in place. But for the newly expanded company to meet its financial goals, the units had to work together. The managers had to become an integrated team. Donaldson could help them.

Together they would keep the company’s share of the diesel engine and turbine market on the rise.

Waterhouse deserved to get the best help, the CEO had said. Bert Donaldson was the best. And later, when the numbers proved the plan successful, Waterhouse could return to the States a hero. (Waterhouse heard Loun’s voice clearly in his head: “I’ve got my eye on you, Frank. You know you’re in line.”)

Waterhouse had been enthusiastic. Donaldson could help him reach the top. He had met the man several times in Detroit. Donaldson seemed to have a quick mind, and he was very charismatic. But that wasn’t the Donaldson who had arrived in Zurich in August 1994 with his wife and two daughters. This man didn’t seem to be a team builder—not in this venue. Here his charisma seemed abrasive.

The elevator comes to a stop. Waterhouse steps into the interior of the building and heads toward the seminar room at the end of the hall.

Waterhouse keeps thinking of his own career. He has spent most of his time since Donaldson’s appointment securing three major government contracts in Moscow, Ankara, and Warsaw. He has kept the ball rolling, kept his career on track. It isn’t his fault that Donaldson can’t handle this assignment. It isn’t his fault that the Germans and the French still can’t agree on a unified sales plan.

His thoughts turn back to Donaldson. It can’t be all Bert’s fault, either. Donaldson is a smart man, a good man. His successes in the States were genuine, and Donaldson is worried about his assignment; it isn’t as though he’s just being stubborn. He sounded worried on the phone. He cares. He knows his job is falling apart and he doesn’t know what to do. What can he return to at Argos in the States
if he doesn’t excel here in Europe?

Let Donaldson run with the ball - that’s what they said in Detroit. It isn’t working.

Waterhouse reaches the doorway of the seminar room. Ursula Lindt, his executive assistant, spots him from the other side. Lindt is from a wealthy local family. Most of the local hires go to her to discuss their problems. Waterhouse recalls a few of her comments about Donaldson: Staff morale on the fifth floor is lower than ever; there seems to be a general malaise. Herr Direktor Donaldson must be having problems at home. Why else would he work until midnight?

Waterhouse takes a seat in the front row and tries to distract himself by studying the meeting schedule. “Managing Change and Creating Vision: Improving Argos with Teamwork” is the title. Donaldson’s "vision" for Argos Europe.

Waterhouse sighs. Lindt hears him and, catching his eye, begins to complain.

“A few of the managers have been making noises about poor organization,” she says. “And Sauras, the Spanish director, called to complain that the meeting schedule was too tight.” Her litany of problems continues: “Maurizio, the director in Rome, came up to me this morning and began to lobby for Donaldson’s replacement. He feels that we need someone with a better understanding of the European environment.” Seeing Waterhouse frown, Lindt backs off. “But he’s always stirring up trouble,” she says. Otherwise the conference appears to be a success. She sits down next to Waterhouse and studies her daily planner.

Then he turns the meeting over to Waterhouse, who apologizes for not having been able to give the managers any notice that this session would be shorter than planned. He assures them that the rest of the schedule is intact and asks them to take this time as a break before their 4 P.M. logistics meeting, which will be run by the French division head.

The managers exchange glances, and Waterhouse detects one or two undisguised smiles. Walking out of the seminar room, he hears someone say, “At least the meeting didn’t run overtime.” Waterhouse fumes. He has put in four years of hard work here in Europe. This is the first year of second three-year contract. He is being groomed for a top management position back in the States. The last thing he needs is a distraction like this.

He remembers how Detroit reacted when, a little over a month ago, he raised the issue of Donaldson’s failure to adjust. He had written a careful letter to Bill Loun suggesting that Donaldson’s assignment might be over his head, that the timing wasn’t right. “That’s rubbish, Frank,” his voice had boomed over the lines. “You’ve been asking for someone to help make this plan work, and we’ve sent you the best we’ve got. Donaldson is your man. You can’t send him back.”

Bill, good to see you... Great. Waterhouse makes a perfunctory inspection of the crowd. Why isn’t Donaldson in here schmoozing? He hears a German accent: “Two-ten. Ja ja. Americanische Punctualkeit.” Punctuality. Unlike Donaldson, he knows enough German to get by.

A signal is given. The chitchat fades with the lights. Waterhouse turns his gaze to the front as Donaldson strides up to the podium.

Donaldson speaks. “As President Eisenhower once said, ‘I have two kinds of problems, the urgent and the important. The urgent are not important, and the important are never urgent.’ He laughs, but the rest of the room is silent save for the sound of paper shuffling.

Donaldson pauses to straighten his notes and then delivers a flat ten-minute summary of the European companies’ organizational structure. He reviews the basics of the team-building plan he has developed - something with which all the listeners are already familiar. He thanks his secretary for her efforts.

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More time is no longer an option, Waterhouse thinks. But if he fires Donaldson now or sends him back to Detroit, he loses whatever progress has been made toward a unified structure. Donaldson has begun to implement a team-building program; if he leaves, the effort will collapse. And how could he fire Donaldson, anyway? The guy isn't working out here, but firing him would destroy his career. Bert doesn't deserve that.

What's more, the European team program has been touted as a major initiative, and Waterhouse has allowed himself to be thought of as one of its drivers. Turning back would reflect badly on him as well.

On the other hand, the way things are going, if Donaldson stays, he may himself cause the plan to fail. One step forward, two steps back. "I don't have the time to walk Donaldson through remedial cultural adjustment," Waterhouse mumbles under his breath.

Donaldson approaches him in the hall. "I sent a multiple-choice survey to every manager. One of them sent back a rambling six-page essay," he says. "I sent them in April. I got back only 7 of 40 from the Germans. Every time I called, it was 'under review.' One of them told me his people wanted to discuss it in German. The Portuguese would have responded if I'd brought it personally."

Waterhouse tells Donaldson he wants to meet with him later. "Five o'clock. In my office." He turns away abruptly.

Ursula Lindt follows him toward the elevator. "Herr Direktor, did you hear what Herr Donaldson called Frau Schweri?"

Bettina Schweri, who organizes Donaldson's programs, is essentially his manager. She speaks five languages fluently and writes three with style. Lindt and Schweri have known each other since childhood and eat lunch together every day.


Back in his office, Waterhouse gets himself a glass of water and two aspirin. In his mind, he's sitting across from Donaldson ten months earlier.

"Once I reach a goal," Donaldson says, "I set another one and get to work. I like to have many things going at once - especially since I have only two years. I'm going for quick results, Frank. I've even got the first project lined up. We'll bring in a couple of trainers from the Consulting Consortium to run that team-skills workshop we talked about."

Waterhouse comes back to the present. That first workshop hadn't heard of any problems. But he, Waterhouse, had not attended. He picks up the phone and places a call to Paul Janssen, vice president of human resources for Argos Europe. Paul is a good friend, a trusted colleague. The two men often cross paths at the health club.

A few seconds later, Janssen's voice booms over the line. "Frank? Why didn't you just walk down the hall to see me? I haven't seen you at the club in weeks."


"Really. Well, overall, not too bad. A few glitches, but nothing too out of the ordinary for a first run. Bert had some problems with his assistant. Apparently, Frau Schweri had scheduled the two trainers to arrive in Zurich two days early to prepare everything, recover from jet lag, and have dinner at the Baur au Lac. They came the night before. You can imagine how that upset her. Bert knew about the change but didn't inform Frau Schweri."

Waterhouse had the distinct impression that Janssen has been waiting for a chance to talk about this. "Go on," Waterhouse says.

"Well, there were a few problems with the workshops. Problems?"

"Well, yes. One of the managers from Norway - Dr. Godai, I believe - asked many questions during Bert's presentation, and he became rather irascible."

"Bert?" Waterhouse asked.

"Yes. And one of the two trainers wore a Mickey Mouse sweater."

"Mickey Mouse?" Waterhouse laughs without meaning to.
"A sweater with a depiction of Mickey Mouse on the front."

"What on earth does that have to do with Bert?"

"Well, Bert offered them a two-year contract after Frau Schweri advised him not to. He apparently told her he was satisfied with the trainers and, so far as he was concerned, question about their personal habits and clothing wasn't worth the time."

"Yes, and."

"Well, there were complaints."

"They all went to Frau Schweri?" He is beginning to see.

"One of the managers said the trainers provided too much information; he felt as though they were condescending to him. A bombardment of information, he called it. Other manager complained that Bert didn't provide enough background information. The French managers seemed to think the meeting was worthwhile. But Bert must think that because his style works with one group, the other will fall into place automatically. And everyone was unhappy with the schedule. The trainers always ran overtime, so everybody was displeased because there weren't enough coffee breaks for people from various offices to network. Oh, and the last thing? All the name cards had first name and last names - no titles."

"No titles," Waterhouse says, and lots out a sigh. "Paul, I wish you'd told me all this earlier."

"I didn't think you needed to hear it, Frank. You've been busy with the new contracts. They agree to meet at the club later in the week, and they hang up. Waterhouse starts down at Donaldson's file. His resume looks perfect. He has a glowing review from the American University in Cairo. There, Donaldson earned the highest ratings for his effectiveness, his ease among students from 40 countries, and his sense of humor. At Argos in the United States, he implemented the cross-divisional team approach in record time. Donaldson is nothing short of a miracle worker. Waterhouse leans back in his swivel-tilter and lets the scuttlebutt on Donaldson run through his mind. Word is that he's an Arbeitstier. "Work animal" is the direct, unflattering translation. He never joins the staff for a leisurely lunch in the canteen, preferring a sandwich in his office. Word is he can speak some Arabic from his lecturing days in Cairo but still can't manage a decent "good morning" in Swiss German. Word is he walks around all day - asking for suggestions, ideas, plans, or solutions because he can't think of any himself."

Waterhouse remembers an early conversation with Donaldson in which he seemed frustrated. Should he have paid more attention?

"I met with Jakob Hassler, vice president of human resources at Schwyz Turbines," Donaldson had said, pacing the office. "I wanted some ideas for the training program. Schwyz is the first company we acquired her; I want to show Hassler that I don't bite. When I opened the door, he just stood there. I offered him a chair beside the coffee table, told him to call me Bert. He nodded, so I asked him about his family and the best place to buy ski boots, and he answered but he acted so aloof. I took a chair across from him, listened to ten minutes of one-word answers, and then I finally asked him how things were going in general, to which he said, 'Everything is normal.' Can you beat that, Frank? I told him I was interested in his ideas, so he pushed his chair back and said, 'Please let me know what you expect.' I reminded him that we're all on the same team, have only two years for major change, gave him a week to get back to me with a few ideas, and you know what he said? He said, 'Ja ja.'"

At the time, Donaldson's frustration seemed to stem from the normal adjustment problems that expatriates face. But he never did adjust. Why doesn't he just give Hassler what he need to know and get out? Waterhouse knows this; why hasn't Donaldson figured it out?

His phone rings - the inside line. It's Ursula Lindt. "Frau Direktor Donaldson just called. She said Herr Direktor Donaldson was expected home at 4. I told her you had scheduled a meeting with for 5. She waits. Waterhouse senses that there is more to her message."

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“What else did she say, Frau Lindt?”

“I inquired after her health, and she said she’s near the end of her rope. Bored without her work. She said they thought Zurich would be a breeze after Cairo. Then she went into a tirade. She said that they’re having serious problems with their eldest daughter. She’ll be in grade 12 at the international school this fall. She’s applying to college. Frau Donaldson said her daughter’s recommendations from her British teachers are so understated that they’d keep her out of the top schools, and she keeps getting C’s because they’re using the British grading scale. She reminded me that this is a girl with a combined SAT score of over 1350.”

Lindt is done. Waterhouse thanks her for the information, then hangs up. Julie Ann is usually calm, collected. She has made some friends here. Something must have pushed her over the edge. And their daughter is engaging, bright. Why is this all coming to a head now?

Waterhouse recalls his most recent meeting with Donaldson, a couple of days before Donaldson’s vacation in May.

“I’ve tried everything, Frank. I’ve delegated, I’ve let them lead, I’ve given them pep talks.” Waterhouse remembers Donaldson sinking deep into his chair, his voice flat. “No matter what I do - if I change an agenda, if I ask them to have a sandwich with me at my desk - someone’s pissed off. We’re talking about streamlining an entire European company and they’re constantly looking at their watches. We run ten minutes overtime in a meeting and they’re shuffling papers. I tell you, Frank, they’re just going to have to join the rest of us in the postindustrial age, learn to do things the Argos way. I worked wonders in Detroit…”

The clock in Waterhouse’s office reads 4:45. What can he do about Donaldson? Let him blunder along for another year? And take another 12 months of... he closes the door on that though. Send him back and forget? Morale on the fifth floor will improve, the Europeans will be appeased, but with Donaldson will go the training program, such as it is. Corporate will just think that Waterhouse has forgotten how to play the American way. They’ll think that he mistreated their star. Can he teach Donaldson cultural awareness? With the Ankara, Moscow, and Warsaw projects chewing up all his time? You can’t teach cultural savvy. No way.

He hears Donaldson enter the outer office. A hanger clinks on the coat tree. How can he work this out?

First, most people define learning too narrowly as "problem solving," so they focus on identifying and correcting errors in the external environment. Solving problems is important. But if learning is to persist, managers and employees must also look inward. They need to reflect critically on their own behavior, identify the ways they often inadvertently contribute to the organization's problems, and then change how they act. In particular, they must learn how the very way they go about defining and solving problems can be a source of problems in its own right.

Put simply, because many professionals are almost always successful at what they do, they rarely experience failure. And because they have rarely failed, they have never learned how to learn from failure.

They become defensive, screen out criticism, and put the "blame" on anyone and everyone but themselves. In short, their ability to learn shuts down precisely at the moment they need it the most.

Effective learning is "... a reflection of how they think - that is, the cognitive rules or reasoning they use to design and implement their actions. Think of these rules as a kind of "master program" stored in the brain, governing all behavior. Defensive reasoning can block learning even when the individual commitment to it is high, just as a computer program with hidden bugs can produce results exactly the opposite of what its designer had planned."

"Companies can learn how to resolve the learning dilemma. What it takes is to make the ways managers and employees reason about their behavior a focus of organizational learning and continuous improvement programs. Teaching people how to reason about their behavior in new and more effective ways breaks down the defenses that block learning."

As long as efforts at learning and change focused on external organizational factors - job redesign, compensation programs, performance reviews, and leadership training - the professionals were enthusiastic participants. Indeed, creating new systems and structures was precisely the kind of challenge that well-educated, highly motivated professionals thrived on.

And yet the moment the quest for continuous improvement turned to the professionals' own performance, something went wrong. It wasn't a matter of bad attitude. The professionals' commitment to excellence was genuine, and the vision of the company was clear. Nevertheless, continuous improvement did not persist. And the longer the continuous improvement efforts continued, the greater the likelihood that they would produce ever-diminishing returns.

They (professionals) were threatened by the prospect of critically examining their own role in the organization. Indeed, because they were so well paid (and generally believed that their employers were supportive and fair), the idea that their performance might not be at its best made them feel guilty.

Such feelings caused most to react defensively. They projected the blame for any problems away from themselves and onto what they said were unclear goals, insensitive and unfair leaders, and stupid clients.

Consider this example. At a premier management consulting company, the manager of a case team called a meeting to examine the team's performance on a recent consulting project. The client was largely satisfied and had given the team relatively high marks, but the manager believed the team had not created the value added that it was capable of and that the consulting company had promised. In the spirit of
continuous improvement, he felt that the team could do better. Indeed, so did some of the team members.

k. The manager knew how difficult it was for people to reflect critically on their own work performance, especially in the presence of their manager, so he took a number of steps to make possible a frank and open discussion. He invited to the meeting an outside consultant whom team members knew and trusted—"just to keep me honest," he said. He also agreed to have the entire meeting tape-recorded. That way, any subsequent confusions or disagreements about what went on at the meeting could be checked against the transcript. Finally, the manager opened the meeting by emphasizing that no subject was off limits—"including his own behavior."

l. "When asked to pinpoint the key problems in the experience with the client, they looked entirely outside themselves. The clients were uncooperative and arrogant. "They didn't think we could help them." The team's own managers were unavailable and poorly prepared. "At times our managers were not up to speed before they walked into the client meetings." In effect, the professionals asserted that they were helpless to act differently—not because of any limitations of their own but because of the limitations of others."

m. "Finally, after some three hours of discussion about his own behavior, the manager began to ask the team members if there were any errors they might have made. "After all," he said, "this client was not different from many others. How can we be more effective in the future?"

n. "The professionals repeated that it was really the clients' and their own manager's fault. As one put it, "They have to be open to change and want to learn." The more the manager tried to get the team to examine its own responsibility for the outcome, the more the professionals bypassed his concerns. The best one team member could suggest was for the case team to "promise less"—implying that there was really no way for the group to improve its performance.

o. The case team members were reacting defensively to protect themselves, even though their manager was not acting in ways that an outsider would consider threatening... With few exceptions, the professionals made attributions about the behavior of the clients and the managers but never publicly tested their claims. For instance, they said that the clients weren't motivated to learn but never really presented any evidence supporting that assertion. When their lack of concrete evidence was pointed out to them they simply repeated their criticism more vehemently."

p. "How can an organization begin to turn this situation around, to teach its members how to reason productively? The first step is for managers at the top to examine critically and change their own theories-in-use. Until senior managers become aware of how they reason defensively and the counterproductive consequences that result, there will be little real progress. Any change activity is likely to be just a fad."

q. "The key to any educational experience designed to teach senior managers how to reason productively is to connect the program to real business problems. The best demonstration of the usefulness of productive reasoning is for busy managers to see how it can make a direct difference in their own performance and in that of the organization. This will not happen overnight. Managers need plenty of opportunity to practice the new skills. But once they grasp the powerful impact that productive reasoning can have on actual performance, they will have a strong
incentive to reason productively not just in a training session but in all their work relationships.

One simple approach I have used to get this process started is to have participants produce a kind of rudimentary case study. The subject is a real business problem that the manager either wants to deal with or has tried unsuccessfully to address in the past. Writing the actual case usually takes less than an hour. But then the case becomes the focal point of an extended analysis.

"In effect, the case study exercise legitimizes talking about issues that people have never been able to address before. Such a discussion can be emotional - even painful. But for managers with the courage to persist, the payoff is great: management teams and entire organizations work more openly and more effectively and have greater options for behaving flexibly and adapting to particular situations." "

What follows is an example of an unresolved issue in a case team meeting between consultants and their manager concerning the "supposed arrogance of the clients".

"Manager: You said that the clients were arrogant and uncooperative. What did they say and do?"

"Professional #1: One asked me if I had ever met a payroll. Another asked how long I've been out of school."

"Professional #2: One even asked me how old I was!"

"Professional #3: That's nothing. The worst is when they say that all we do is interview people, write a report based on what they tell us, and then collect our fees."

"Manager: The fact that we tend to be so young is a real problem for many of our clients. They get very defensive about it. But I'd like to explore whether there is a way for them to freely express their view without our getting defensive. What troubled me about your original responses was that you assumed you were right in calling the clients stupid. One thing I've noticed about consultants - in this company and others - is that we tend to defend ourselves by bad-mouthing the client."

"Professional #1: Right. After all, if they are genuinely stupid, then it's obviously not our fault that they aren't getting it!"

"Professional #2: Of course, that stance is anti-learning and overprotective. By assuming that they can't learn, we absolve ourselves from having to."

"Professional #3: And the more we all go along with the bad-mouthing, the more we reinforce each other's defensiveness."

"Manager: So what's the alternative? How can we encourage our clients to express their defensiveness and at the same time constructively build on it?"

"Professional #1: We all know that the real issue isn't our age; it's whether or not we are able to add value to the client's organization. They should judge us by what we produce. And if we aren't adding value, they should get rid of us - no matter how young or old we happen to be."

"Manager: Perhaps that is exactly what we should tell them."

"The above dialog demonstrates how team members and their manager are learning about their own group dynamics and commonplace problems in client-consultant relationships. More important, they are developing a deep understanding of their role as consultants and are laying a foundation for continuous improvement."

Appendix 7.

Ladder of Inference

An example: I am an educator trying to introduce new substance abuse addiction counseling techniques I have learned about, but have not practiced, to paraprofessional counselors who are themselves in recovery. The job of the counselors is to help addicts understand more about their debilitating disease and consider healthy alternatives for addressing their problems. As I introduce the concepts, I observe people looking at each other and shifting in their seats. Then I am verbally attacked by Mary who states, that "Since you are not in recovery and have never walked in our shoes, we prefer to stick to our own techniques!" In the culture of addicts this means "You're not one of us, and we do not trust you or your knowledge about treatment".

From this I think "You won't listen to me because I'm not in recovery", and "Because I'm not an addict, you think that what I have to say is nonsense, or worse, rubbish". From this I infer that all addicts are ignorant and want to remain that way. Further, addicts refuse to let in new knowledge, particularly if it is based on academic research.

By the time the meeting is over I am certain that all recovering addicts are pathetically smug and closed minded. Finally, I will quietly plot to wage a war to prove their counseling techniques are little more than venting sessions. In those few minutes I climbed up what Argyris calls a Ladder of Inference:

* Observable data: attack from Mary, this would show up on a videotape or audio tape recording, or from others present
* Details I selected: people shifting about in their seats, and looking at each other for affirmation that what I am saying is relevant
* Meaning I added: they think my information is useless, and I'm incompetent
* Conclusion: these people are rigid and inflexible in their thinking
* Belief: people in recovery are ignorant, closed minded and smug
* Actions: I will plot against Mary to disconfirm the effectiveness of counseling techniques currently used.
Appendix 8.

Outline For a Plan

I. Introduction
   a. Subject and Objectives
   b. Statement of Problem
   c. Background or History of Problem
   d. Needs to be Satisfied
   e. Barriers or Limitations to Plan Implementation
   f. Scope of Plan

II. Body of Plan
   a. Methods or Techniques to be Applied in Workplace
   b. Timetable for Implementation
   c. Materials and Equipment, include Needs of Training Program
   d. Personnel Required to Implement Plan
   e. Costs to Corporation
   f. Measurable Outcomes

III. Conclusion
   a. Summary of Key Points of Needs and Implementation Plan
   b. Request for Action

The above outline is only a guide, the subheadings can be rearranged, combined or in some cases eliminated, as needed. The most important section of the Plan is the Body.
Appendix 9.

Pre-Workshop Needs Assessment

Participant Survey Workshop Date:_________

1. Briefly indicate why you are taking this workshop.

2. Indicate one or two things you would like to learn from the workshop.

3. How do you define critical thinking?

4. Please define creative thinking.

5. Define what the term defensive reasoning means?

6. What behavioral characteristics are commonplace to critical and creative thinking?

7. Please describe your current approach to problem solving.
8. Please describe, in global terms, the values that govern your behaviors.

9. What strengths, and development needs, do you think you have in solving problems - both technical and interpersonal?

10. Describe the ways in which you engage your direct reports in the problem solving process?

11. If you presently encourage and support critical and creative thinking in the people you manage, please describe how this is done.

12. Please describe your present method(s) or model of problem solving in your work group.
Appendix 10.

Post-Workshop Evaluation

Participant Survey Workshop Date: ________

1. In what ways did the workshop meet, or not meet, your needs and expectations?

2. Attempt a brief definition of critical thinking and list several characteristics associated with critical thinking.

3. Attempt a brief definition of creative thinking and list several characteristics associated with creative thinking.

4. Describe if and how your thinking has changed as a result of your participation in the workshop. Please be specific.

5. What impact does Senge's theory of governing values and behaviors have in the workplace?

6. Describe the most useful part of the workshop.

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7. Describe the key learning of the workshop with respect to helping your direct reports enhance their skills to become more effective on the job.

8. In the context of integrating employees into the organization, what did you find to be the most enlightening parts of the workshop?

9. Describe what you found least useful about the workshop. Please explain in detail.

10. Describe how you will encourage and support your employees to become better problem solvers in their daily tasks.


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