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DISSERTATION

FAR AND CREATIVE LEARNING TRANSFER IN MANAGEMENT DEVELOPMENT INTERVENTIONS: AN ECOLOGICAL TRIANGULATION APPROACH TO QUALITATIVE META-SYNTHESIS

Submitted by

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In partial fulfillment of the requirements

For the Degree of Doctor of Philosophy

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COLORADO STATE UNIVERSITY

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WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY PAMELA DIXON ENTITLED FAR AND CREATIVE LEARNING TRANSFER IN MANAGEMENT DEVELOPMENT INTERVENTIONS: AN ECOLOGICAL TRIANGULATION APPROACH TO QUALITATIVE META-SYNTHESIS BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

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ABSTRACT OF DISSERTATION

FAR AND CREATIVE LEARNING TRANSFER IN MANAGEMENT DEVELOPMENT INTERVENTIONS: AN ECOLOGICAL TRIANGULATION APPROACH TO QUALITATIVE META-SYNTHESIS

This meta-synthesis utilized a sample of studies on organization-sponsored management development interventions implemented in United States, Canada, United Kingdom and European organizations. The sample of studies consisted of published articles in peer-reviewed journals and doctoral dissertations. This study explored the following question: What management development interventions have demonstrated what results, in terms of adaptive and/or creative transfer, with what learner characteristics, in what settings, and using what theoretical frameworks?

There are three primary interpretations made based on this study. The first is that in order to attain higher (or deeper) levels of learning transfer, managers and their respective organizations must think differently. The second is that it may be beneficial to apply measures focused on the group and organizational units of analysis, and that are extended over the long term using a mixed methodology. Finally, knowledge and skills found at the lower levels of learning transfer (i.e., application) are easily trained utilizing formal methods. Higher levels or deeper levels of learning transfer, however, must be approached holistically and ecologically; that is, the "hard to train" skills are those found at the higher end of the transfer scheme (i.e., interpersonal skills) and involve cognitive, emotional, behavioral, and environmental factors.

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"In one sense, we are all experts in transfer, yet in another and more important sense, we are all lacking in higher order transfer skills. The more skilled we are in transfer, the more creative and efficient is our thinking and performance."

The statement above, by Haskell (2000), has far reaching implications with regard to the nature of organizational performance improvement. According to Holton and Baldwin (2003), performance improvement occurs through learning. In other words, the transfer of learning can be viewed as a critical building block for performance improvement (Holton, Baldwin, Naquin, 2000), as well as the change process (Gilley and Maycunich, 2000); both of which are critical success factors in organizations today. The individuals within organizations that are accountable for performance improvement and managing the change process are the managers (at all levels).

Managers are called upon to drive performance improvement, manage change, and get results in an environment that consists of ever-increasing complexity and ambiguity (Gilley and Maycunich, 2000). Given this environment, managers must demonstrate deeper levels of thinking and cognitive processing, and the ability to apply creative problem solving (Haskell, 1998). In other words, the wide-ranging demands on managers within organizations require higher or deeper levels of learning transfer. The construct of learning transfer, therefore, must be understood in a way that supports the required development of managers in organizations today.

Background

The construct of transfer has been explored extensively, and has been a controversial topic throughout the twentieth century (De Corte, 2003). In its infancy, the construct of transfer was described by theorists as depending largely on the degree of

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similarity between the learning situation and the situation in which the learning would be applied (i.e., the job tasks). Thorndike referred to this notion as "identical elements" (Thorndike and Woodworth, 1901; Thorndike, 1913). During the early stages of research on the construct, most studies could be found in the cognitive, education and instructional psychology arenas.

By the 1980's, the construct of transfer began to emerge as a topic of interest in corporate training. Training theorists described "positive transfer of training," (Baldwin & Ford, 1988), which was defined by generalization and maintenance, or in other words, "the degree to which trainees effectively apply the knowledge, skills, and attitudes gained in a training context to the job.....for transfer to have occurred, learned behavior must be generalized to the job context and maintained over a period of time on the job" (p. 63).

Broad & Newstrom (1992) framed training transfer in the context of organizations investing in training initiatives and gaining a return, or value from that investment. They defined transfer of training as "the effective and continuing application, by trainees to their jobs, of the knowledge and skills gained in training—both on and off the job" (p. 6). These authors also presented a model that demonstrated how training professionals, as well as trainees and managers impacted the ability to transfer before, during and after the training occurred (Broad and Newstrom). This model became a catalyst for future research on the conditions of transfer.

Even though many theorists have supported the existence of the construct, it is not without its opponents. Lave (1988) and Detterman (1993) both argued that the construct of transfer does not exist. Both authors argue that because knowledge and skills are contextual, they cannot be generalized or adapted. One recent author concurs that their

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argument may have some merit based on the number of cases outlining experiences of employees being sent away for training, presumably learning new skills, only to return to their office and regress back into previous behavioral patterns (Kilburg, 2000).

These concerns notwithstanding, the notion of transfer potentially has profound implications for organizations that desire to remain competitive in what has come to be termed the knowledge economy (Drucker, 1985). The current reality facing organizations today requires a "reconceptualization of the transfer construct in terms of productive use of knowledge and skills in a variety of situations....." (De Corte, 2003, p. 22). Our understanding of transfer continues to evolve beyond the traditional view, which has remained grounded in the original theory espoused—identical elements; or in other words, transfer is defined as applying knowledge and skills from one learning situation to a similar work situation (Bransford & Schwartz, 1999).

Mayer and Wittrock (1996) argued for a broader view of transfer. They suggested that "successful transfer occurs when the problem solver is able to recognize the requirements of the new problem; select previously learned specific and general skills that apply to the new problem, and monitor their application in solving the new problem" (p. 50). Similarly, Noe (1999) adapted a model developed by Baldwin and Ford (1988) and argued that if skills are learned and retained, then generalization and maintenance can occur. Further, Noe suggested that elements of transfer such as "training design, trainee characteristics, and the work environment influence learning, retention, maintenance, and generalization" (p. 152).

Holton and Baldwin (2003) designed a framework of the transfer system that places emphasis on intervention (versus description). The framework consists of the

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three elements noted above: training design, trainee characteristics, and work environment. The authors contend that these "are essential to any transfer system" (p. 9). The one modification the authors made was in their description of "learner." They defined learner as an individual or a team. Further Holton and Baldwin's framework incorporated and expanded upon Broad & Newstrom's (1992) model illustrating the stages for transfer (before, during, and after); the framework consists of five time-based stages.

Holton and Baldwin's (2003) framework provides a systemic view of all of the elements and conditions associated with transfer. The authors' purpose in designing the framework was to illuminate "how organizational systems can be changed to enhance transfer" (p. 5). This was fueled, according to the authors, by a lack of prescriptive, action-oriented academic literature, which has created a gap between researchers and organizational practitioners.

Haskell (1998), whose research is academic in nature, suggests that HRD transfer models have lacked a rigorous research base. He maintains, however, that one important characteristic found in the HRD model of transfer, which does not exist in the academic instructional model of transfer, is a "recognition of the organizational or social support systems for facilitating or sustaining transfer—if and when it should occur" (p. 37). Further, Haskell described the HRD literature as almost exclusively focusing on "organizational support of transfer and not on cognitive and instructional methods from the psychological research".....whereas academic research places emphasis on "the individual, internal mental processes, instructional methods that seldom extend beyond the small group learning environment" (p. 37). Haskell suggests this may be due to the

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fact that students in academic settings have no context of support (i.e. a job within a work environment) to facilitate transfer.

Like Holton & Baldwin (2003) and Haskell (1998), Bransford and Schwartz (1999) also argued for a more expansive view of transfer. Specifically, these authors provide a perspective that places emphasis on the ability to learn in new contexts, which presumes that learning is a dynamic, active and constructive process. The authors considered this view of transfer as "preparation for future learning." Bransford and Schwartz's stance is consistent with the definition posed by Hatano & Greeno (1999), who suggest the ability to learn in new contexts impacts the extent to which transfer occurs. In a similar vein, Ford & Weissbein (1997) leaped beyond the established indicators of transfer, generalization and maintenance, and suggested a third indicator of transfer: *Adaptation* (see table 1).

Adaptation is defined by Ford and Weissbein as the "capability to adjust one's knowledge and skills in the face of novel situations or requirements. Further, they also called it the "capacity for learning how to learn" (p. 34). Most recently, De Corte (2003) supported the notion of transfer as adaptability by providing a conceptual definition of transfer as "the broad, productive, and supported use of acquired knowledge, skills, and motivations in new contexts and learning tasks" (p. 142).

Ford & Weissbein (1997) argued the need for future research with respect to the "adaptation" level of transfer. These authors referred to an earlier review of transfer literature by Baldwin & Ford (1988), which brought awareness to deficiencies or limitations in the literature regarding "the multidimensional nature of transfer and the limited operationalization of transfer constructs" (p. 23).

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Generalized	Evidence of trained behaviors in response to dissimilar situations from those with which participants were trained.
Maintained	Changes in the form or level of knowledge, skills or behaviors demonstrated in the transfer setting as a function of time elapsed from the completion of the training program.
Adaptive	Degree to which the training participant can adapt to novel or changing situational demands.

Table 1: Adaptive Level of Transfer (Ford and Weissbein, 1997)

According to Ford & Weissbein (1997), the Baldwin and Ford review contained prior studies that operationalized transfer primarily as "near transfer" or a focus on short-term measurement, similar contexts between learning and task, and less complex (closed) tasks, which according to Ford and Weissbein, was "inadequate for drawing conclusions about learning transfer as a construct" (p. 24). The studies included in the Ford and Weissbein review were conducted between 1988 and 1997. The authors indicated a clear advancement in the literature in that the articles contained a "greater variety of measures and time intervals used to evaluate transfer" (p. 24). The studies reviewed were primarily focused on the conditions of transfer, or factors affecting transfer; versus transfer outcomes. For example, in an examination of one condition of transfer, training design, Ford and Weissbein indicated the use of "more complex tasks, more diverse samples, and using longer intervals between training and criterion assessment to demonstrate transfer" (p. 31).

Ford & Weissbein's (1997) review supports the conclusion that the construct of transfer had been expanded in recent years to be more consistent with the reality of working and learning in organizations today. Holton & Baldwin (2003) support Ford &

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Weissbein's (1997) contention that "considerable progress has been made in understanding factors affecting transfer" (p. 4). Further, based on their experience with two decades of transfer research, Holton and Baldwin suggest thinking about transfer in terms of transfer distance, or near transfer and far transfer. They defined near transfer as task-specific, whereby the training and application are similar contextually. Holton and Baldwin likened far transfer as more abstract and longer term, such as participating in management training focused on change management principles, and then applying what was learned over time, for example, as the leader in a merger. Similarly, Haskell (2000) suggests that far transfer is learning that is applied to situations that are quite divergent from the original learning.

Another indication of progress in the transfer literature includes a distinction made by Haskell (2000), which differentiates between transfer of training and transfer of learning:

> While training is appropriate for some very concrete, specific tasks, it's becoming an increasingly less appropriate mode of instruction for business. Unlike training, learning tends to be more knowledge based, less task specific, more long-run oriented, more process than product oriented, more conceptual and theoretical, and more learner centered than instructional method or technique driven. Thus, learning tends to be more generative or creative than training. And, learning results in a deeper level and a broader scope of transfer than does training; therefore, there is more long-term payoff. (p.34).

Based on his conception of learning transfer, Haskell (1998, 2000) developed a scheme, which is illustrated below (table 2). The scheme is qualitative in nature, which

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Haskell (1998) says is necessary because a "metric of similarity by which we can quantitatively distinguish precise degrees of how similar one thing is to another does not exist" (p. 23). The first level outlined in the scheme refers to "nonspecific transfer." In a sense, the description provides the basis to Lave and Detterman's argument against the existence of transfer. It suggests that all learning depends on a connection to past learning, therefore the argument could be postulated, and was by Detterman (1993), that transfer doesn't exist because learning is simply learning. However, Haskell views it differently. He suggests that no two situations are exactly the same; therefore all learning can be viewed as degrees of transfer.

Level II and III proceed into a progression or expansion of the construct. Application transfer (level II) is defined as applying what has been learned in one situation to the same or very similar situation (this level of transfer is consistent with the identical elements theory of transfer), and contextual transfer is defined as applying what has been learned in one situation to a slightly different situation or context (i.e. the learned task is exactly the same, but the context has changed). Haskell (1998) refers to the first two levels as "simple learning," and the third level as "application of learning" (p. 24).

At the higher end of the scheme (according to a higher or more significant level of learning) is Level IV, termed Near Transfer. Also, Level V, termed "far transfer," and Level VI, termed displacement or creative transfer. Haskell defines near transfer slightly different than Holton & Baldwin (2003). Haskell's definition suggests near transfer is recognizing and applying what was originally learned to situations that call for a slight variation in the learned task and applied in a different context. Far transfer equates to

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learning that is applied to situations that are considered to be very different in substance or context as compared to the original learning. This is similar to Ford & Weissbein (1997) definition of adaptive transfer (i.e., applying what has been learned in the past in order to adapt to novel situations). According to Haskell (1998, 2000), the use of metaphors, analogical reasoning, and mental models are evident in far, or adaptive, transfer. Further, York (2003) asserts that far transfer is assumed to occur informally "without explicit coaching or methodologies" (p. 151).

York (2003) points out that far transfer is one outcome intended for action learning programs and communities of practice. In terms of communities of practice, York suggests:

> ....transfer from communities of practice, which are generally organized as tacit in terms of design, seems to require....the ability for adapting ideas and knowledge shared by people in one practice setting to another setting that can be significantly different in context. Equally important to the codified content knowledge is know how for making this adaptation to the new setting. It is generally assumed that participants bring this know how to the community. (p. 152).

Finally, the highest level of transfer in Haskell's (1998) scheme, Level VI, is referred to as "creative transfer." At this level, individuals transfer learning over time in a way that leads to new, innovative concepts by integrating two seemingly discreet concepts and a creating a new concept. Further, individuals adept at this level of transfer think in terms of "generic structures" (p. 79), which involves comparing two unrelated things systematically. It is in this light that Haskell suggests "transfer of learning is not

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so much an instructional technique as it is a way of thinking, perceiving and processing information" (p. 18). Haskell cites the example of the Gutenberg printing press, which was invented by the combination of two technologies that had been in existence for many years. The first, individual block letters used to make an imprint in wax and put an embossed seal on a document; and the second technology, the wine press, which used a handle to lower and squeeze or press juice from grapes. These two unrelated technologies were integrated and ultimately produced the printing press (Haskell).

Haskell's Scheme of Levels of Transfer	
Level I	Nonspecific transfer. All learning depends on a connection to past learning, therefore all learning in this sense is transfer.
Level II	Application transfer. Apply what has been learned to a specific situation—learning how to use a word processor and apply the learning to operate the word processor.
Level III	Contextual transfer. Apply what has been learned to a slightly different situation. A change in context, although the learned task is exactly the same. All three levels are considered "simple learning"
Level IV	Near transfer. Recognizing and applying what was learned originally to situations that are similar but that are slightly different from the original learning task and situation.
Level V	Far transfer. Apply learning to situations that are quite dissimilar, either in substance or contextually, to the original learning. What is ordinarily called metaphorical and analogical reasoning is evident in this kind of transfer.
Level VI	Displacement or creative transfer. Discover a heretofore unrealized similarity and interaction between the old and the new, a new concept is created. This level is often involved in problem solving and other innovative endeavors.

Table 2: Haskell's Scheme of Levels of Transfer
Haskell, Robert E. (1998, 2000). Reengineering Corporate Training: Intellectual Capital and Transfer of Learning. Westport: Quorum Books.

Haskell (1998) argues that Level IV, V, and VI are to be considered significant transfer, as opposed to simple learning or application of learning, because transfer at the higher levels "requires the learning of something new in the transfer" (p. 24). In other words, varying or adapting past learning to a different situation or context equates to learning something new in the process. Moreover, Haskell points out that most instructional research that has set out to investigate transfer, and failed to demonstrate it,

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have been researched at Levels I, II, or III. Based on the scheme, the author suggests these studies don't reflect a failure of transfer, but rather a failure of learning (Haskell).

This paper will utilize Haskell's scheme as a theoretical framework; specifically, the focus of this paper will be on management development interventions utilizing content (e.g., abstract principles) and methods that are consistent with level five and/or six of the scheme.

Holton, Baldwin, & Naquin (2000) maintain that learning transfer underpins performance improvement, and Gilley & Maycunich (2000) point out the criticality of transfer to the change process. Similarly, Block (1994) stated that "learning and performance will become one and the same thing" (p. 36). All of these authors are describing the higher levels of transfer (e.g., creative transfer), and echo Haskell (1998) when he states, "transfer of learning is leveraged learning" (p. 31). Haskell describes an example of creative transfer:

> Erie Bolt corporation was about to go bankrupt when a new CEO was hired who thought in terms of generic structures. Rather than asking how Erie Bolt could make better bolts, he asked a more generic question: What business was Erie Bolt in? His answer was that the company was not simply one that made bolts but one that (1) forged metal, (2) heat-treated metal, (3) did the machining of metal, and (4) performed other metalworking functions. When Erie Bolt was seen as not just a manufacturer of bolts, it could then reengineer and reinvent itself by transferring its new-found knowledge into new products. (p. 79).

Haskell (1998) suggests that learning transfer in organizations has primarily focused on conditions of transfer (Baldwin & Ford, 1988; Holton, Baldwin, and Naquine,

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2000), and not enough attention has been paid to the thought processes of the individuals; in particular the entrepreneurs and innovators within organizations. In other words, focus should be given to the individual's mental models for generating creative ideas and innovation. Based on this, it could be inferred that while management systems within organizations play a supportive role in transfer, it is the development and cultivation of individuals' mental models that should be emphasized. To the extent that far and creative transfer impact organizations, investigation at these higher levels may elucidate and inform the current trends regarding management in organizations; specifically the role of manager, the environment within which managers work, as well as the nature of management development.

The role managers' play in organizations has changed over the course of the past few decades from command and control (Mintzburg, 1973; Statt, 2000) to that of coach, mentor, and counselor (Gilley & Maycunich, 2000), whereby emphasis is placed on performance as well as fostering creativity and innovation (Baldwin, T. T. & Patgett, M. Y., 1994; Drucker, P. F., 1985). Management knowledge of and skill in interpersonal communication skills, performance management (including giving and receiving feedback), change management, negotiation, and creative problem solving are needed (De Corte, E., 2003; Gilley & Maycunich, 2000); and require far and creative levels of transfer. Haskell postulates that "those individuals and organizations who develop transfer abilities will be the ones who will be able to best adapt, compete and survive" (p. 30).

The purpose of this study is to analyze and synthesize primary research studies about organization-sponsored management development interventions, which by the

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nature of the intervention has the potential to result in far or adaptive transfer (Ford & Weissbein 1997; Holton & Baldwin, 2003; York, 2003) and creative transfer (Haskell, 1997; 2000). More specifically, the intent of this study is to conduct a qualitative meta-synthesis in order to obtain an expanded purview of the interdependent relationships among management development interventions, associated results in terms of adaptive and/or creative learning transfer, characteristics of managers as learners, and the transfer settings or environments. I will utilize an ecological triangulation approach to qualitative meta-synthesis (Banning, 2003) whereby an examination of primary research studies will be conducted using an ecological sentence synthesis (Banning, 2003).

I will analyze and synthesize a sample of studies on organization-sponsored management development interventions implemented in United States, Canada, United Kingdom and European organizations. The sample of studies for this research will focus on those completed within the last decade; between the years 1995 through 2005, and will consist of published articles in peer-reviewed journals, as well as doctoral dissertations.

Statement of Research Problem

Some scholars who have written about learning transfer in organizational settings have stated that the purpose of learning transfer is to create and sustain a competitive edge through performance improvement and adapting to change (Gilley & Maycunich-Gilley, 2003; Holton & Baldwin, 2003). Haskell (1998) states that learning transfer is an organization's ability to "generate new ideas multiplied by its adeptness at generalizing them throughout the company" (p. 50). Based on the tenets proffered above, it seems imperative to Human Resources Development (HRD) practitioners to gain a multi-

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dimensional view of what management development interventions have demonstrated what results in terms of adaptive and/or creative learning transfer, with what learner characteristics, in what settings, using which theoretical frameworks.

Two significant studies, which were identified earlier in this paper, reviewed and analyzed the literature regarding elements of and conditions for learning transfer (Baldwin & Ford, 1988; and Ford & Weissbein, 1997). In both reviews, the literature was found to be lacking in transfer studies focused on far or adaptive transfer, and therefore, the recommendation was made for future research to be rectify this gap.

In an attempt to review the progress made in the past decade with regard to research on far transfer, and the theories applied to frame the construct, this study will analyze and synthesize literature on management development programs that are encompassed in the adaptive and/or creative learning transfer construct, within organizations in the United States, Canada, United Kingdom and European organizations.

Research Question

In order to investigate the relationships described above, I will explore the following question: What management development interventions have demonstrated what results, in terms of adaptive and/or creative transfer, with what learner characteristics, in what settings, and using what theoretical frameworks?

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Definitions of Terms

Analogical Transfer	A way of solving a problem by thinking of a similar problem we have solved in the past to come up with a solution.
Creativity	The ability to fragment past experience to permit the formation of new spontaneous combinations.
Creative Transfer	Transfer learning over time (implies knowledge base) by integrating two seemingly discreet concepts and a creating a new concept or innovation. Involves generic thinking.
Ecological Thinking	Consists of thinking in terms of relationships, connectedness, and context
Far/Adaptive Transfer	Degree to which an individual can adapt past learning to novel or changing situational demands that are quite divergent from the original learning; and maintained for the long-term (3+ months).
Knowledge	Condition of knowing something with familiarity gained through experience or association; to recognize as being the same as something previously known (Webster, 2001).
Learn	To gain knowledge of or skill in; to memorize; to become aware of, realize (Webster, 2001).
Learning Transfer	Knowledge based, less task specific, more long-run oriented, more process than product oriented, more conceptual and theoretical, and more learner centered than instructional method or technique driven. Thus, learning tends to be more generative or creative than training (i.e. training transfer).
Near Transfer	Degree to which an individual recognizes and applies what was originally learned to situations that call for a slight variation in the learned task and applied in a different context.
Networks	Pattern of formal and informal linkages between individuals, business and other organization such as government and voluntary agencies for the purpose of information sharing, learning, and knowledge creation.
Training Transfer	The degree to which trainees apply the skills gained in a training context to concrete, specific tasks on the job; new skill or behavior is generalized to the job context and maintained over a period of time.
Transfer	To carry, convey, from one place to another (Webster, 2001).

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Limitations and delimitations

- Data are limited to only those studies I found and selected for inclusion. Therefore, even though patterns may emerge from the analysis, the possibility exists that there are pieces still missing to the puzzle based on my decisions. Even though meta-synthesis provides a mechanism to go beyond interpretation through the integration of multiple studies, it is nonetheless limited to the findings of only studies encapsulated in this paper.
- Quality of primary studies—studies were reviewed utilizing the Design and Implementation Assessment Device (DIAD) model, version 0.3, While the authors of the model suggest that the assessment of qualitative designs does not appear to be difficult, some structural aspects of the model may be problematic for qualitative designs.
- There was only one researcher involved in this study. The vast amount of literature and capabilities of one researcher are limited compared to more than one researcher typically involved in a meta-synthesis.
- This is the researcher's first attempt at conducting a meta-synthesis. There are potentially unforeseeable gaps in terms of procedural quality and quantity.

Significance of Research

There is great potential in exploring and understanding the far or adaptive and creative levels of learning transfer. I would argue that research on learning transfer that does not focus at these levels for management development interventions is less relevant based on our current economic and organizational environment. It is my intent to provide

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an understanding of learning transfer at the far and creative levels in order to develop themes about what works, with what management populations, in what contexts, with what results, and using what theories. While it is a very small step, the intent is to move practitioners closer to understanding how transfer functions as it relates to organizational learning and performance improvement.

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Chapter Two

Literature Review

The literature that informs this study consists of a brief historical review of the foundational models of transfer. In addition, the review will entail an exploration of far transfer, which is viewed from the perspective of Haskell's (1998) transfer scheme, and three supporting areas of research: (a) scheme and information processing theories, (b) analogical transfer, and (c) applicable memory research. Further, this review will describe two areas of research, creativity theory and ecological thinking, that support the notion of Haskell's sixth level of transfer; creative transfer. Before I begin to describe these higher levels of transfer, I must first put learning transfer into the context of this study and describe the imperatives driving management development today. The review that follows places emphasis on the changing nature of the managerial role in organizations, the organizational environment, and the subsequent trends for management development.

> "The journey of [organizational] transformation is anything but a straight line. The process requires significant turns in the road because of the simple fact that it is full of uncertainty.....the future state is being discovered while the organization is going forward, the transformation process is literally the pursuit of an emerging target." (Anderson & Ackerman-Anderson, 2001, p. 41).

Organizational Management

The quote above paints quite a different picture than Fredrick Taylor's view of management in the early 1900's. Taylor's approach was called Scientific Management, which focused on the organization as a static entity whereby efficiency and control were the primary responsibility of the manager (Taylor, 1911). Statt (2000) asserts that the historical view of an organization, as a static entity, is no longer useful given the

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complexity experienced within the environment. Instead, managers should think in terms of organizations as the "continuous process of *organizing*" (p. 134). From a broader perspective, this is consistent with a view of organizations as an open system (Sadler, 2001).

As an open system, an organization "...must always respond to constraints imposed on it by the nature of its relationship with the environment" (p. 55). For an organization to achieve continued growth or renewal, Sadler (2001) proposed that the organization's structure, processes and culture must be inextricably linked and adaptable to meet rapidly changing demands from the environment. Macready & Meyer (1999) maintain that, as a result, a new mindset is needed with "different attitudes toward control, variability, and prediction; new approaches to problem solving suitable for non linear, highly connected systems; and the new tools required to execute these approaches" (p. 182).

Vaill (1989) used the metaphor of white water to capture the nature of organizations. Vaill suggested that the experience of management in organizations is like paddling in white water because the environment cannot completely be controlled. Further, Vaill outlined three fundamental changes that impact managers and create the turbulent "white water" environment. First, the role of manager has changed, which is due to the second change; the rapidly changing demands of a new environment; and third, based on the first two changes, the ways in which managers learn and develop are also changing. Accordingly, the review of organizational management that follows will consider the role of manager, the environment within which managers take action and perform, and the subsequent trends identified for management development.

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"...those people at the top of enterprises today who encourage others to leap into the future, who help them overcome natural fears, and who thus expand the leadership capacity in their organizations—these people provide a profoundly important service for the entire human community." (Kotter, 1996, p. 186).

Role of Manager. A review of a modern textbook on management informs us that setting priorities and long term planning skills are paramount (Lussier, 2003). Paauwe & Williams (2001) describe a reality that would seem counter to the importance placed on prioritization and longer term planning. The authors describe the role of manager as working under time constraints and reacting to minute by minute problems and interruptions, which does not necessarily allow for prioritization or longer term planning. Further, Paauwe and Williams state that managers obtain information necessary to act by "talking with colleagues and from intuition or gut feel" (p. 93). From their perspective, managers plan in the midst of chaos (i.e., white water), and also apply the social skills necessary to build and nurture networks with peers that fuel their ability to intuit and subsequently take action.

Ruegg-Sturm (2005) describe the role of manager within a systematic management process, which consists of four components: (a) orientation, (b) planning, (c) implementation and (d) feedback. Orientation involves the generation of ideas and creates a sense of purpose; planning involves identification of goals, with emphasis placed more so on the short term then on long term; implementation is concerned with transferring goals into action; and feedback involves creating a loop that circles back with the purpose of evaluating the degree of goal attainment and effectiveness of implementation within the organizational and external environments (Ruegg-Sturm).

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According to Swanson (1999), a systems perspective is needed in order for managers to effectively influence performance improvement efforts. Gilley, Boughton, and Maycunich (1999) concur and argue that the role of manager in organizations is to manage performance, develop employees, and create the systems necessary to drive organizational effectiveness. The authors expressly maintain that "organizations must learn how to transform managers into performance coaches.....which requires managers to shift constantly from training, counseling, confronting, and mentoring" (p. 9).

All of these managerial "hats" are executed through the use of feedback. As stated above, feedback involves creating a loop that circles back with the purpose of evaluating the degree of goal attainment and effectiveness of implementation within the organizational and external environments. Moreover, feedback integrates many of the parallel systems within an organization (HR, Finance, etc.), which in turn, creates a higher level of organizational complexity. According to Ruegg-Sturm (2005), a system becomes complex when "the elements of a system interact in a variety of ways and interrelate with each other in a specific and dynamic relationship" (p. 7). Within the context of a complex system, the management process is necessarily dependent upon the environment (i.e., requires changes in interactions); an environment that seems to be more and more non-linear and in a constant state of flux (Ruegg-Sturn; Paauwe & Williams, 2001).

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"The present environment of chaotic change requires a response so different from the traditional managerial approach... permanent white water is the metaphor appropriate to capture the pace, complexity, novelty, danger, and nonstop challenge of the modern environment" (Vaill, 1989, p. xiv).

Organizational Environment. Wheatley (1992) and Wheatley and Kellner-Rogers (1996), provide a framework that consists of complexity and chaos theory to view the current state of organizations. From Wheatley's perspective, managers have to manage and adapt to constant, sometimes dramatic, internal changes on a day to day basis. These changes reflect the organization's attempt to manage external chaotic conditions (Wheatley). Some organizations do not survive in the mode of constant change, while others are able to remain effective. Kirchhoff (1977) stated organizational effectiveness "emerges as the ultimate outcomes of a combination of managerial effectiveness and factors not under organizational control" (p. 348). Paauwe & Williams (2001) point out two such factors: the knowledge worker and a structural shift to a boundary-less organization. The authors note:

> Workers who are employed primarily for their knowledge, rather than any other skills and abilities they may have, have changed the task of management. Management in the sense of controlling what people do is hardly useful when dealing with knowledge workers. They cannot really be managed, rather they need to be led. Further, the trend to working in teams along key processes rather than along purely functional lines is blurring internal power and managing relationships. (p. 94).

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Given the aforementioned characteristics of employees (i.e., knowledge workers), and the changes in organizational structure and coordination, as well as the swift pace of organizational change; it is evident that Vail's (1989) foretelling of the changing ways in which managers must learn and develop must be better understood.

Management Development. Baldwin & Patgett (1994) define management development as "the complex process by which individuals learn to perform effectively in managerial roles" (p. 270). The development process necessitates a longer term view and implies a higher level of complexity in terms of content and evaluation; compared to training or education, which tend to be more short-term focused and evaluated straightforwardly (Baldwin and Patgett). Paawe and Williams (2001) concur and maintain that the process of development entails progressive change over the long term that is driven in a general and sometimes ambiguous direction.

Given the changes in managerial activities and work environment, Paauwe & Williams (2001) contend that the critical success factors involved in management cannot be taught easily. In fact, they suggest that those aspects of management that can be taught easily "probably do not have much influence on actual managerial success" (p. 93). Rather, the authors contend that what is needed for management development are the things that are not effectively learned in formal training. Bereiter & Scardamalia (2003) provide examples of skills not easily trained, such as inter-personal communication and building relationships. The authors advise that these soft skills develop over the long-term and they argue that the only way to insure transfer of soft skills is through a method of immersion. From their perspective, transfer is not so much about training design or methods, but rather the learning environment. Bereiter and

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Scardamalia argue that environmental immersion will lead the individual to utilize the "natural adaptive abilities" (p. 56).

Management theorists (Sternberg and Horvath, 1999; Vaill, 1989) have also emphasized the importance of intuition as a managerial asset. However, many times managers' reactions to problems and, moreover, what they have been taught, has been to apply rational analysis based on a linear view of problem solving (Sternberg and Horvath). Sternberg and Horvath argue that intuition, which has not been emphasized in traditional management development, is critical in the current organizational environment. Further, the authors state that the variables that make up intuition are highly suggestive of a complex tacit learning process.

Paauwe & Williams (2001) contend that intuition can be learned, but not necessarily through a formal process; rather the authors maintain that intuition is learned through experiential and social conditions, and upon reflection. While the authors acknowledge that reflection may not be a suitable approach given the time constraints experienced by managers; nonetheless, they suggest reflection can be supported through socialization with colleagues—"it may be possible to use such social networking time as an aid to building up intuition...." (p. 96). Haskell (1998) takes a slightly different view, and states that intuition is a result of "having a large knowledge base and having acquired expertise in an area" (p. 49).

In terms of learning through social networks, some knowledge management theorists (Brown & Duguid, 2000; Eden & Ackerman, 1998; Suchman, 1987) suggest that in this light, organizations should be viewed as knowledge systems, whereby action is taken based on socially defined values (Eden and Ackerman), and individuals are not

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so much information processors as they are contextual thinkers (Brown and Duguid). In other words, managers take action based on the learning generated from the interaction within a social network in the organization. Further support can be found from Bell (1999) who argued that knowledge is different from information in that knowledge is laden with judgments about meaning and significance, which is perceived within the context of the organization. Knowledge can be used to support and maintain the status quo, or it can be used incite change (Argyris & Schon, 1996).

Argyris & Schon (1996) contend that learning in organizations can be characterized as either single-loop or double-loop. Single-loop learning is accomplished by reacting to an event, and taking action that enables maintenance of the status quo. Conversely, double loop learning is accomplished by reacting to an event, by questioning and changing the assumptions and values that underlie management practices (i.e. status quo) (Argyris and Schon). It has been suggested that a fundamental facet of managing in organizations is to define routines and then implement them (Nelson & Winter, 1982). According to Argyris and Schon, implementing routines is a single-loop activity, and therefore becomes a limiting factor to enabling continuous learning and change.

Two decades ago Drucker (1985) envisioned that we were moving toward an entrepreneurial society, and proffered that continuous learning on the manager's part would become essential. Drucker maintained that thinking like an entrepreneur is critical for managers in organizations, and that individuals will need to take responsibility for their own learning and development throughout their careers.

Indeed, there has been a significant shift in accountability for learning, from the educator and/or trainer to the manager (trainee); increasingly, the responsibility lies on

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the manager to take control of their own long term development. This shift is seen by some as a positive impact on transfer (Campione & Brown, 1990), and a natural consequence of being an adult learner (Mackeracher, 2004). A high degree of self-regulated learning has been shown to create learners who are more motivated and able to transfer their current knowledge to novel situations (Campione and Brown). However, Paauwe & Williams (2001) caution that the reliance on the manager to direct their own development (versus an educator or trainer) may present a gap in terms of a formalized way of measuring actual learning or transfer. Further, the authors suggest that the content of a manager's development is not necessarily assessed or evaluated for effectiveness. To that point, Haskell (2000) argues that in order to transfer learning, an individual must understand how learning transfer works and focus on transfer *thinking*.

According to Vermunt (1998), the degree of transfer has been proposed to be a function of the level of information processing (Vermunt, 1998). Vermunt contended that in order for transfer to occur, deep-level processing (versus surface-level) had to take place. Surface level processing equates to the learners intention to remember facts (rote memory) and deep-level processing refers to the learners intent to understand the main argument, underlying principles or assumptions, as well as the conclusions drawn Boekaerts and Minnaert (2003). Further, Vermunt postulated that surface-level processing and deep-level processing are negatively correlated; they are at opposite ends of a spectrum. However, research on surface and deep-level processing undertaken by Boekaerts and Minnaert (2003) provided evidence that the modes of processing information are not negatively correlated; rather individuals may have a dual processing system whereby they have a predominant processing strategy they use, but not always. In

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other words, an individual may use either surface or deep level processing depending on the context.

The social nature of learning presented by Hatano and Greeno (1999) supports the notion that learning through interaction is critical to transfer. Specifically, there is tremendous value in the use of networks as a means to information sharing, learning and knowledge creation (Rothwell, 1992; Conway and Steward, 1998). The importance of networks, both intra and inter-organizational, cannot be overemphasized in terms of knowledge creation and the innovation process (Drucker, 1985; Rothwell, 1992). More and more, networks are seen as learning opportunities. Chell and Baines (2000) found networking was positively related to business growth, especially for growing businesses, or those in a renewal phase of their organizational life cycle. The authors contend that entrepreneurial networks help, in particular, owner-managers of small start up firms to build their business by providing access to limited resources including knowledge and skills (p. 205). Moreover, they suggest that relationship management is a development priority for managers in order to succeed at building a broad network (Chell and Baines).

Similarly, Barnett and Storey (2000) state that the nature of learning is best accommodated through informal networks. They state "rather than traditional business support systems and didactic learning programs, alternative approaches need to consider the range of opportunities that may exist" (p. 268). According to these authors, one approach is to use real life problem solving projects, or action learning (Argyris and Schon).

The trend toward real life projects is supported by many adult learning theory researchers (Korsgaard, 1997; Mackeracher, 2004; Piskurich, 1993; Taylor, Marienau &

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Fiddler, 2000). Vermunt (2003) argues that problem-based learning promotes deep-level thinking "because students have to search for explanations and understandings for mostly meaningful problems" (p. 112). Further, Vermunt asserts that problem-based projects support cooperative and self-directed learning. In addition, Sternberg & Horvath (1999) state that for learning to take place there must be four elements present: 1) the issue involved must be seen to be important by the individual; 2) some analysis must be involved, e.g., the comparison and contrasting of two or more different approaches to the issue; 3) creativity must be called upon; e.g. improving an existent design; and finally 4) practical application of the newly created improvement is necessary. From this perspective, reality-based problem solving would seem to be advantageous as a management development intervention, and seems to be conducive to far and creative transfer. However, this perspective isn't shared by all researchers.

Bereiter & Scardamalia (2003) argue problem-based learning promotes only limited opportunity for iterative idea improvement. This is due to an emphasis placed on learning about and solving a problem for a single case. In other words, problem-based learning does not allow for adaptation of knowledge to other problems. Some studies on learning theory have demonstrated that complex, or "deep" learning requires the ability to create and use analogies that connect several domains of knowledge (Getner, Loewenstein, J. & Thompson, L., 2003; Gick M. & Holyoak, K. J., 1983; Novick, 1988; Robertson, 2001; Ross, 1987). In other words, if individuals can link seemingly unrelated events or cases to different problems, they may likely be able to produce creative solutions to novel problems (Novick, 1988; Ross, 1987).

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A study by Collins (2002) provides contrary evidence to the effectiveness of informal learning networks on the job. Collins examined the effectiveness of management development interventions by conducting a meta-analysis of studies carried out between 1982 – 2001. The author concluded that formal training programs; versus feedback, developmental relationships, and on-the-job experiences, were the most effective in terms of knowledge outcomes, with an effective size ranging from .96 to 1.37. The evidence provided seems to be contrary to what other organizational and management theorists have suggested, i.e., developmental relationships, such as networking, are a more effective strategy for managers in today's environment (Conway & Steward, 1998; Rothewell, 1992; Vermunt, 1998).

The review of literature regarding organizational management presents a complex context, with sometimes contradictory results, within which learning transfer was examined. In order to provide a deeper perspective of organizational management, three components were explored: the role of manager, the work environment, and the ways in which managers learn and develop.

To the first order, the manager's role was described, and as such seemed to belie some of the management theory still espoused (Lussier, 2003). The living experience of managers illustrate a need for "new approaches to problem solving suitable for non linear, highly connected systems...." (Macready & Meyer, 1999, p. 182). Two changes that have impacted the role of manager are the introduction of the knowledge worker and the transition to a more boundary-less organizational structure.

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Next, the organizational environment was reviewed. The environment was described as fast paced, complex and ever-changing, which reflects the organization's attempt to manage external chaotic conditions (Wheatley, 1992).

Finally, a process for management development is espoused, which entails progressive change over the long term, and skills that are not easily taught or typically learned in formal training (Paawe & Williams, 2001), such as inter-personal communication (Bereiter & Scardamalia, 2003), and intuition (Sternberg & Horvath, 1999; Vaill, 1989). Further, speculation on the methods of managerial learning seem to suggest that learning through social networks is most effective (Brown & Duguid, 2000; Eden & Ackerman, 1998; Paauwe & Williams, 2001). Further, Argyris and Schon (1996) contented that single-loop learning is most prevalent in organizations today, which enables maintenance of the status quo. Conversely, double loop learning, which is what is needed to drive organizational change, is accomplished by questioning and changing the assumptions that underlie management practices (i.e. status quo). According to Argyris and Schon, implementing routines is a single-loop activity, and therefore becomes a limiting factor to enabling continuous learning and change. In addition, Drucker (1985) proposed that thinking like an entrepreneur is critical for managers in organizations, and that they will need to take responsibility for their own learning and development throughout their careers. Part of taking responsibility for learning is, according to Haskell (2000) understanding how learning transfers.

Foundational models of transfer

Haskell (2000) outlines three primary transfer models that have been foundational to transfer research: (a) Formal Discipline, (b) Identical Elements, and (c) General

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principle model. Under formal discipline theory, scholars argued that training in formal disciplines such as math or language, by their very nature, facilitated transfer (Haskell, 2000). In other words, "it was assumed that transfer somehow was present in the structure of the discipline itself" (Haskell, p. 79). Haskell also points out that, to date, there is no concrete evidence to support this.

The identical elements model, created by Edward Thorndike (1901), postulated that the only way for transfer to occur is for a common set of identical elements to be in place between two experiences or learning events. According to Haskell (2000), this theory of transfer leads to, at most, near transfer, and "does not lead to synthesizing and integrating information across domains" (p. 80).

The third transfer model, the General Principle model, was developed by Charles Judd (1908). Judd proffered that transfer occurs based on identical elements, as well as through the application of learned principles that are general or abstract in nature to situations that do not possess obvious identical elements (Judd, 1908). In other words, after learning a general principle (such as how leaders create a shared vision during an organizational change), the learning can readily be transferred to different situations within different contexts. It was Judd's theory of transfer that spurred theories of transfer beyond Identical Elements, however it isn't until the 1990's that we begin to see an emergence of a more multi-dimensional model of transfer in the HRD literature. Also, an emphasis on "far" transfer (as defined by Haskell, 1998) in the psychology-based literature becomes more evident in the early 1980's.

Yelon & Ford (1999) suggested that "certain variables interact in noticeable patterns to produce transfer" (p. 58). In light of this, the authors propose a

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multidimensional model whereby transfer is viewed as a complex set of processes interacting. Two processes investigated by the authors were "the nature of the task performed and the degree of autonomy" (p. 59). From the authors' perspective, many of the studies on transfer up to that point had focused more so on "closed tasks." The authors reviewed Ford and Weissbien (1997) review of transfer studies and determined that open tasks performed by autonomous workers were generally nonexistent. Yelon & Ford suggest an example of an open task by an autonomous person is "a manager motivating staff to work harder or a manager conducting a sexual harassment seminar" (p. 67).

Yelon & Ford (1999) outline interventions to produce successful transfer for autonomous workers with open tasks, including: teaching principles and procedures, and how to choose conditions; vary cases and conditions of practice; and use reflection on application. Further, they mention two potential conflicts or obstacles to transfer: "one of the problems in working with autonomous workers performing open skills may be providing enough examples to cover all the major possibilities they will encounter. Another potential conflict might be between encouraging creative application and arguing against assertions that the task should be standard" (p. 72).

Based on a review of training evaluation models and 10 years of training effectiveness research, Alvarez, Salas, and Garofano (2004) developed an integrated model (IMTEE) consisting of four prior training evaluation models as well as synthesized training effectiveness research. The authors first distinguished between the two constructs and defined evaluation as a "measurement technique that examines the extent to which training programs meet the goals intended;" and effectiveness is defined as "the

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study of variables that likely influence training outcomes at different stages (e.g., before, during, and after) of the training process" (p. 387). Further, the authors state that effectiveness can be categorized and researched under one or more of three characteristics: individual, training, and organizational.

Alvarez, et al. (2004) argue that evaluation focuses solely on outcomes; therefore, it does not provide a comprehensive view of how the training obtained the results it achieved. Consequently, effectiveness characteristics, i.e., *why* participants did or did not learn, needs to be integrated into one model. In order to develop such a model (the IMTT), the authors reviewed four evaluation models. The first model was developed by Kirkpatrick (1976) and focused on four dimensions of evaluation: 1) reactions, 2) learning, 3) behavioral change, and 4) results. The second model reviewed was an expansion on Kirkpatricks model, developed by Tannenbaum, Cannon-Bowers, Salas, & Mathieu (1993).

This model used Kirkpatrick's model as a foundation and added post-training attitudes. Further, the authors differentiated behavior into two outcomes: training performance and transfer performance. Training and transfer performance are defined respectively as "the ability to perform a newly acquired skill at the end of training, prior to transfer, and is measured through observable demonstration; and a behavioral change on the job as a result of training and can be assessed via supervisor evaluations of on the job behavior or post-training retests several months after training" (p. 388). The model views learning as a precursor to training performance, and training performance as a precursor to transfer performance, and finally transfer performance as a precursor to obtaining performance results (Alvarez, et al., 2004).

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The third model reviewed was published by Holton in 1996. Holton's model is similar to Tannenbaum, Cannon-Bowers, Salas, & Mathieu (1993) in two respects. First, it placed an emphasis on learning, transfer and results, whereby learning is followed by transfer and transfer is followed by results. Secondly, Holton's model integrated evaluation and effectiveness.

The fourth model was developed by Kraiger (2002), which emphasized "three multidimensional target areas for evaluation: training content and design, changes in learners, and organizational payoffs" (Alvarez et al. 2004, p. 8). This model, as well as the previous three models discussed, place emphasis on three characteristics: individual, training, and organization. These characteristics have also been incorporated into the Learning Transfer System Inventory developed by Holton, Bates & Ruona (2000). It is clear that an integrated, mutli-dimensional view of transfer is now emphasized in the HRD literature.

The research on learning transfer in the field of cognitive psychology informs deeper levels of learning, which can be equated with far or adaptive transfer (Hatano & Greeno, 1999). The emphasis found in this line of research is on access and retrieval of knowledge (Getner, 2003; Gick & Holyoak, 1983). Similarly, Haskell (1998) states that significant (far) transfer can only occur when a person can access or recognize transfer situations. Haskell contends that *access* is at the heart of the transfer problem. He explains this by stating that individuals may in fact recognize surface similarities between two situations and therefore transfer may be facilitated. However, he suggests that individuals do not necessarily recognize or access underlying structural (deep) similarities. Moreover, Haskell contends that "the basic transfer of learning question

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continues to be: what is it that enables a person with specific knowledge, learning, understanding or skill learned in one area and/or social context to adapt, modify, or extend it in such a way to be able to apply it to other novel or very different areas" (p. 27).

Far Transfer

Far transfer refers to learning that is applied to situations that are quite divergent from the original learning and maintained in the long-term (Haskell, 1998; 2000). Far transfer has also been termed, "adaptive" by Ford and Weissbein (1997). According to these authors, "adaptability is defined as the capability to adjust one's knowledge and skills in the face of novel situations or requirements. The strongest form of adaptability occurs when effectiveness in the transfer setting requires the use of trained knowledge and methods to generate new approaches and strategies" (p. 34).

Primary theories associated with far transfer in the cognitive psychology field include scheme theory and information processing theory, analogical transfer (thinking) theory, as well as theories on memory. In order to understand the richness of far or adaptive transfer, the theories listed above will briefly be reviewed.

Schema and Information Processing Theories. A cognitive model of learning transfer called schema theory has been explored and described as integral to far transfer (Macaulay & Cree, 1999). Schema theory contends that "knowledge is retained in the mind in terms of representations which are continually reconstructed according to new experience" (p. 184). Further, Information Processing theory has been noted to be integral to far transfer, and described as an individuals ability for generalization and abstraction through which representations in memory are reconstructed (Statt, 2000).

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Macaulay & Cree suggest that we can better understand how learning transfer occurs by studying these two theories in combination. These theories both reinforce the notion of analogical transfer or thinking.

Analogical transfer. Analogical thinking (transfer) has been defined as a way of solving a problem by tapping into our memory and thinking of a situation that has similar characteristics (surface or underlying) that we have solved in the past, and applying that solution to a current situation or problem (Gick & Holyoak, 1983). Analogies provide a different way of looking at things; allowing us to see new relationships and draw inferences about a current problem or situation, which potentially can lead to unanticipated solutions (Dartnall, 2002; Gick & Holyoak, 1983; Hummel & Holyoak, 2002; Robertson, 2001). For example, during a whitewater canoe trip a few summers ago, my partner and I found ourselves paddling over a ledge, and subsequently we were sucked into a rather large "hole." A hole is a hydraulic condition whereby the water sucks you under and tosses you around as if you were in a front loading washing machine. It is possible to get out of the hole, but only if you are able to get in sync with the waters current, whereby you are rapidly flushed out and sent down stream. When faced with resistance over a change initiative at work recently, I was reminded of this event and used it as an analogy to help my group get "unstuck." We had to acknowledge the organization's environment had changed and also that we were arguing based on assumptions that were no longer accurate. Therefore, we were going around in circles, and essentially feeling stuck. We had to think differently in order to act in a way that was conducive to meeting the demands of our current environment (i.e., getting unstuck).

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Hummel & Holyoak (2002) suggest there are four components that make up analogical thinking: 1) access a potentially useful prior experience in memory, 2) transfer it onto a target problem, 3) draw an inference about the target situation, and 4) generate similarities between the target and the source, which becomes a scheme or abstraction that is stored in long term memory. Moreover, the authors contend that analogical thinking allows for the generation of new representations (i.e., new ways to describe things) and therefore is integral to creativity.

According to Kolodner & Reisbeck (1986) learning occurs through adding a new experience to our memory. As a result the authors explain that if numerous attempts are made to resolve a problem, and several failures are experienced over a period of time, and finally a solution is found, then that final solution may be utilized directly in a future similar situation without first trying the previous failed attempts (Kolodner & Reisbeck). Further, the authors speculate on the usefulness of failure as a mechanism for learning.

The procedures described by Kolodner & Reisbeck (1986) involve thinking analogically based on previous experience stored in memory. Using past experiences stored in memory for solving problems depends on a learner's ability to: "locate previous similar cases, integrate new cases into memory so that they can be located when necessary, determine the applicability of an old case to a new one, and choose from among a number of potentially applicable previous situations, and transfer knowledge from a previous case to a current one" (p. 107).

Two barriers to analogical transfer that have been noted by Getner, Loewenstein and Thompson (2003) include accessing past experience to help solve a current problem and adapting the past experience to fit the current problem. Gentner et al. argue that we

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are not naturally inclined to seek an answer to a problem in one domain and apply it to another, very different domain. Ross (1987) concurs and suggests people cannot adapt a solution from a prior experience to another very different problem without difficulty. Some reasons postulated are the effects of general knowledge, or lack of knowledge base (Haskell, 2000) and a tendency to impose constrains on a solution (Halford & Wilson, 2002; Ross, 1987). Similarly, it has been argued that creative thought is a result of breaking away from past experience (Wertheimer, 1982). Further, Haskell (2000) maintains that people find it hard to transfer what they have learned in one context to another very different context unless (a) a hint is provided to use the earlier problems; (b) the earlier problem is harder than the current one; (c) there is a clear structure that maps across from one problem to another; (d) solvers can represent the problems in a "useful" way; or (e) the two problems are seen as similar (surface or structurally). In sum, Haskell suggests that unless an individual is aware of and can access abstract knowledge, they will struggle to adapt a solution from prior experience to a current, contextually different, problem or situation.

Past research has suggested that abstract knowledge is beneficial in that it can be applied to a variety of domains, i.e., it is generalizable (Gick & Holyoak, 1983; Holyoak, 1985). In other words, abstract knowledge contained in memory is the basis for the development of thinking that is generalizable (Reeves & Weisberg, 1993). To better understand the notion of abstract knowledge and it's impact on generalization, Reeves & Weisberg explored the role of concrete information and examples in problem solving and thinking. The authors concluded that "details of problems and the context in which problems are learned guide the transfer of a solution to a target" (p. 245). They argue

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that their research demonstrates that past experience plays an important role in creative or insightful thinking and resolution of contextually different problems. These authors contend that:

> Thinking is primarily concrete in nature, i.e. that cognitive processes such as problem solving depend on specific features of the situation in which the thinker is working..... transfer from previously encountered problems to novel problems often provides the scaffolding for the development of greater expertise.....concrete aspects of situations often provide a positive basis for problem solving and transfer itself is a source of more advanced knowledge. (p. 248).

Analogical thinking (transfer) requires the ability to access and retrieve specific features of a situation in memory in order to map or apply it to a contextually different problem or situation. Therefore, analogical thinking, and thus far transfer, is heavily dependent on memory.

Memory. Memory has an important role to play in learning transfer. In order for memory to be useful to us, what we have learned in the past has to be retrievable in the future, particularly when we are faced with novel situations. Kolodner & Riesbeck (1986) utilized a memory-based model of learning and encoding for far transfer. In other words, the model places emphasis on how our memory enables learning transfer. In order to describe this phenomenon, the authors made a distinction between memory and knowledge. According to the authors, "a memory is something that remembers and a knowledge base is something that holds information" (p. 3). They suggest that while our knowledge tends to be inert, i.e., a storehouse of facts; our memory is constantly

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changing based on our new experiences (Kolodner & Riesbeck, 1986). From the perspective of a memory-based model, learning begins with memory change.

According to Kolodner & Reisbeck (1986), "instead of viewing understanding as a process that brings knowledge up from memory and applies it to a situation, we view understanding as a process of storing pieces of the situation in the relevant places in memory" (p. 4). In other words, Kolodner and Reisbeck suggest that we categorize the experience and create knowledge through memory structures in our mind.

Howard (1994) outlines a process of memory, which involves three distinct stages. Simply stated, the sense organs (sight, smell, and hearing) react to environmental stimuli by sending information to the brain, and an ephemeral trace remains in the sensory memory (stage 1). The sensory memory then transmits, or encodes the trace onto the second stage of memory; short term memory, which lasts long enough to work through the task at hand and to encode in the third stage, namely long term memory (Howard). Further, environmental cues (contextual) play a critical role in encoding from short to long term memory (Reeves and Weisberg, 1993).

There is evidence to suggest that memories that are stored in long term memory do not fade with time; rather they change, i.e., become distorted (Howard, 1994; Bahrick, 2005). In an attempt to make sense out of reality and the way we experienced something, we will add things that didn't occur or subtract things that did occur (Bahrick, 2005). Therefore, the information held in our memory is not static but in a constant state of reorganization as our understanding is updated (Howard, 1994; Bahrick, 2005).

Bahrick (2005) contends that a limitation of memory research is that is has primarily focused on "short-term retention of episodic memory content" (p. 89). The

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author views this as problematic because long term effects may uncover more information about the conditions that affect maintenance of knowledge. Also, many of these conditions are not easily manipulated, such as motivation (Bahrick, 2000; Bjork, 1994). Further, research has emphasized specific memory processes, such as episodic memory, rather than researching the whole memory systems function (Bahrick). Further, Bahrick suggests this has been largely because understanding function has been presumed to depend on understanding structure. However, Nairne (2005) argues:

> There is evidence that our memory systems are functionally designed. Our capacity to access and use the past evolved to help us solve particular problems, adaptive problems....without a functional perspective it will be extremely difficult to determine how any mnemonic system works. Structure, from this perspective is a by-product of function rather than the other way around: nature designs, or selects, particular structural features because they aid in solving a problem. The ability to store, recover, and use the past serves an adaptive role. (p. 115).

Nairne (2005) argues that acknowledging the context-dependent nature of memory is critical. The author suggests that drawing upon our memory is based on a "conditional response selection" (p. 117). In other words, we will select certain aspects of memory based on the attributes present in a given situation. Moreover, Nairne maintains that "the success of remembering cannot be determined by the characteristics of a cue or the characteristics of a single target response, but only through consideration of the cue to target interaction" (p. 120). Perhaps the interaction Nairn refers to can be attributed to how we *think*.

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Creative Transfer

According to Haskell (1998; 2000), learning transfer, at the sixth or "creative" level, is rooted in how individuals think. In fact, while he labels the sixth level of transfer in his schema, creative, he does not refer to this level as creative transfer as he describes it in later chapters. Rather, he explains the sixth level of transfer as *Transfer Thinking*. Perhaps Haskell came to apply the term creative to this level of transfer based upon research on the construct of creativity. For example, two researcher's state, "a prominent requirement for creativity is that the cognitive system.....must generate new representations from experience. The generation of new representations—new ways to describe things and their relationships—is a cornerstone of creative accomplishment" (Hummel & Holyoak, 2002).

Basalla (1998) states "Any new thing that appears in the made world is based on some object already in existence" (p. 45). Further, Haskell (1998) quotes Jacob Rabinow who stated, "....one invents by putting things together that normally don't go together," and Stanford Ovshinsky who said, "For the most part, my inventions come from seemingly unrelated information....I draw upon my store, my environment" (p. 85). Similarly, Sternberg and Lubart (1995) suggest that creativity is a person-system interaction. Taken together, it can be inferred that creativity is meaningful only in the context of a system. In other words, creativity is manifested in the interaction between an individual and a given system.

In terms of the interaction between person (creative idea generator) and system (environment), it has been suggested that often creativity is confronted with people

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who see the ideas as "incompatible with conventional ways of thinking and vested interest" (Sternberg & Lubart, p. 84). Creative ideas are rejected because the ideas go against the status quo, and are oppositional within a given system. Kuhn (1970) states that some creative ideas can reject current paradigms, and are therefore more transformational, i.e., double loop learning (Argyris and Schon, 1992), or they can be viewed as adaptive, forward-incremental creativity that works within a current organizational paradigm. The latter is suggestive of single loop learning occurring in the organization (Argyris and Schon).

> *"What is a creative mind, that it might emerge from a complex system; and what is a complex system, that it might give rise to a creative mind?"*
>
> Ben Goertzel, From Complexity to Creativity

Haskell places creative transfer in the context of the organization and suggests that it is driven by "intellectual capital, which is the knowledge that people have and that will increase in worth..." (p. 47). Further, he states that "intellectual capital is the basic material from which financial results are made" and he distinguishes between two types of intellectual capital:

> Human capital is the source of innovation and renewal, whether it issues from knowledge base, brainstorming, laboratory findings, or leads that a sales representative has acquired. Putting this capital to work, however, requires structural intellectual assets. These include information systems, actual market channels, and other management structures. To engage a little transfer, we might view human capital as the software and the structural capital as the hardware to implement it. (p. 49).

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Haskell also argues that in the HRD context, human capital is "productive knowledge; knowledge that leads (at some point) to financial gain....therefore, inert knowledge is not intellectual capital" (p. 50). He contends that "many problem solving situations are ambiguous and ill-structured, which creates problematic conditions for transfer....what is needed to cope with ill-structured problems is an extensive knowledge base" (p. 119). Further, Haskell (1998) suggests that noticing generic structures (e.g., mental models, scripts, and cultural norms) is important to enabling creative transfer. He states, "Being unaware of mental and organizational structures keeps us from inventing, creating, and seeing relationships or connections that could lead to change or innovations" (p. 137). Essentially, remaining unaware of generic structures becomes an obstacle for creative transfer. In order to create or invent an individual must have the ability to look beyond the generic structures that are their current frame of reference (e.g., double loop learning, Argyris and Schon, 1992).

Creativity Theory. Creativity depends on using our mental processes to create novelty (Halford & Wilson, 2002). It has been described as a natural consequence of the learning process (Dartnall, 2002). Creativity is generally described in terms of combinationism, which is the belief that creativity is the combination or recombination of previously existing elements in memory (Dartnall, 2002).

According to Maier (1970), creativity requires "the ability to fragment past experience to permit the formation of new spontaneous combinations and, in contrast, learning requires the ability to combine or connect elements that have been contiguous to each other in our experience" (p. 174). Maier suggests that while both learning and creativity are necessary and play a significant role in problem solving, they are not the

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same. He states that "one person may possess an unusual learning ability and be uncreative; another may be unusually creative but not be outstanding in learning ability" (p. 176).

The point Maier makes elucidates an obstacle to transfer at the creative level. For example, a well-educated person can solve a problem by applying what he or she already knows. While this would be a successful approach, it would not be considered a creative solution. Application of their current knowledge doesn't necessarily allow for unique solutions to be developed. This requires the ability to combine parts of different solutions from different experiences that are stored in memory. Creative thinking is a radical rather than a conservative look at a problem and requires encouragement if it is to be nurtured (Halford & Wilson, 2002).

One solution to thinking creatively, or in "radical" versus "conservative" terms can be explained by the general distinction between divergent and convergent insight (Sternberg & Davidson, 1995). These terms reflect the classic distinction between divergent and convergent thinking.

Divergent thinking is defined as "thinking that flows outward from a concept, making contact with other ideas and possibilities that one might not ordinarily consider" (Sternberg & Davidson, 1995, p. 260). It leads to the discovery of remote associations and insights into unusual uses for common things (Maier, 1970). Convergent thinking refers to "thinking that focuses on a single idea of possibility, given a collection of facts" (Sternberg & Davidson, 1995, p. 260). An example of convergent thinking is determining that a particular route to work is the best possible way, considering the

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traffic, the speed limits, and the road conditions (Sternberg & Davidson, 1995). According to Sternberg & Davidson (1995):

> A corresponding distinction can be made between convergent and divergent insight. In convergent insight, one discovers a creative structure or solution that makes sense out of apparently disconnected facts. This is exemplified in classic insight problems where conventional approaches will not work. Convergent insight is particularly useful in solving mysteries, where one must collect relevant clues and then discover a coherent explanation for them. Divergent insight in contrast occurs when one begins with a structure and seeks to find novel uses for it or novel implications of it. Divergent insight can be likened to the explorer who follows a path to see what might be discovered rather than to confirm what is already known or suspected. In divergent insight, one tries to find the meaning in the structure rather than to structure that which is meaningful. (p. 261).

These descriptors suggest that it is important to suspend expertise in attempts at creative problem solving. If a person "knows" how something should turn out, that person might constrain the direction of creative thought (Dartnall, 2002; Sternberg & Davidson, 1995). This is not to say that applying expertise in the creative process isn't warranted; it seems to be a matter of timing.

Creativity theorists suggest that creativity entails both generative and analytical processes (Halford & Wilson, 2002). For example, Osborn (1963), the originator of brainstorming, proposed that creative problem solving progressed through three stages: 1) problem formulation, 2) idea finding, and 3) idea evaluation. During idea finding, the solver generates as many ideas as possible (divergent thinking), whereas during idea

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evaluation, the solver analyzes the merits and disadvantages of each idea (convergent thinking). In other words, generative processes are critical because they produce novel solutions to problems. On the other hand, solutions to problems are only valuable if analyzed in the context of the problem and environment with which it will be applied.

It could be argued that individual creativity must be defined with respect to a system that includes not only the individual but also social and cultural factors which influence the creative process and help to constitute creativity (Isaksen, Puccio, & Treffinger, 1993). I would conclude that creativity should be explored through an ecological model, thus incorporating the context and environmental factors.

Ecological Thinking

Ecological Thinking has been defined in terms of asking the question, "What are the mutually interdependent relationships among behavior, persons and environments" (Banning, 2003). It has also been described as an interactionist approach in that "it is concerned with the interaction of several variables within a specific context, very much like the ecologist who explores the interactions among living and nonliving components within an ecosystem" (Isaksen et al., 1993).

According to Capra (1996), ecological thinking can be defined as consisting of relationships, connectedness, and context. Capra suggests that in science this kind of thinking is known as systems thinking. He states that system thinking views a problem or phenomena within the context of a system. The system is viewed as an integral whole whereby no part can be understood if it is viewed separate from the entire system (Wheatley, 1992). In addition, Capra suggests that all "living" systems contain feedback

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loops, which have causally connected elements. He says, "an initial cause propagates around the links of the loop, so that each element has an effect on the next, until the last feeds back the effect into the first element in the cycle" (p.77).

Ecological thinking, like systems thinking, allows researchers to study the phenomena of learning transfer by exploring the interdependent relationship among variables that lead to transfer outcomes: interventions, the people involved, and the setting/environment (much like the emergence of the multidimensional models HRD researchers have recently presented).

Haskell (2000) in his attempt to describe the creative level of transfer, also supports the notion of ecological thinking. He points out that there have traditionally been two philosophical camps with regard to the *mind* that have been applied to transfer theories. Haskell states that, on the one hand, there is the philosophical view (predominantly academic) that the processes responsible for transfer reside inside the mind, and in another view (predominantly HRD), it is suggested that processes reside outside of the mind—in the environment. Haskell states that "a mistake has been made in taking only a single view of *mind* and applying it to transfer....transfer is complex and multifaceted" (2000, p. 85). Haskell's statement implies a need to use an ecological approach to thinking about learning transfer; viewing creative transfer as the interaction between mind and environment. Haskell underscores this by stating the creative level of learning transfer is really about transfer thinking.

Relationship between ecological thinking and creative transfer

The creative level of learning transfer has been described as a person-system interaction by Sternberg & Lubart (1995), and ecological thinking has been described as

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"the mutually interdependent relationships among behavior, persons and environments" (Banning, 2003). I interpret these two descriptions as having similar, if not the same properties.

Ecological thinking can be viewed as a process or approach to better understand the construct of creative learning transfer, but more importantly, it would seem that creative transfer cannot occur without ecological thinking. In other words, creative transfer, or as Haskell terms it, transfer thinking, and ecological thinking can be seen as equivalent. This is exemplified by Capra's (1996) insights into ecological thinking. Capra suggests that feedback, which occurs through interactions between elements within a given system, is what enables a living system to have its own learning capacity.

Organizations are complex adaptive systems (Wheatley, 1992), and their ability to sustain, grow and succeed requires flexibility and a capacity to respond to environmental feedback (Berkes, Colding & Folke, 2000). They require creative learning transfer to take place.

> *"For fragmentation is now very widespread, not only throughout society, but also in each individual; and this is leading to a kind of general confusion of the mind, which creates an endless series of problems and interferes with our clarity of perception so seriously as to prevent us from being able to solve most of them...."*
>
> David Bohm

In general, the tendency of researchers has been to break down and explore the parts of a problem or phenomena independent of the interaction between those parts. Further, we have set up boundaries to reflect the separation (Wheatley, 1992). The same can be said about research on the constructs of memory (Bahrick, 2005), which was

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stated earlier in the paper, as well as learning transfer (Cormier & Hagman, 1987) and creativity (Maier, 1970).

In the case of learning transfer, it has been stated that a reductionist approach has been taken, whereby the focus of research efforts are on isolating specific elements associated with learning transfer; specifically, the characteristics of the learner (trainee), aspects of training design, and the learning environment (Ford & Weissbein, 1997). Consequently, we have gained insight into each of these variables, with some studies resulting in transfer, and others that have not (Detterman & Sternberg, 1993; Haskell, 2000; Hatano & Greeno, 1999).

In the same vein, research on creativity has studied the parts, or variables, that are said to make up creativity; specifically, the person, process, products, and environment (Isaksen, Puccio, & Treffinger, 1993). Here again, we have garnered much from the conclusions drawn from these studies of creativity. However, not much attention has been given to the constructs of learning transfer and creativity in terms of the interaction between variables that make up either construct, as a whole system or phenomena.

As David Bohm's quote above suggests, in order to understand the outcomes of research on the construct of learning transfer, a researcher needs, not only to explore specific variables, but also the interaction between them. To this end, ecological thinking becomes a critical process to explore and understand the construct of transfer. Halford & Wilson (2002) support this notion and contend that creative thought is not possible if the relationship or interactions between variables within a given phenomena cannot be recognized.

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This review of literature has attempted to inform learning transfer at the fifth and sixth levels of Haskell's learning transfer scheme (Haskell, 1998, 2000). I have reviewed the realm of management development, as well as foundational theories that have provided a platform from which to explore learning transfer. Further, I have incorporated a brief overview of theories that enable us to understand far transfer, such as theories on memory and analogical transfer and memory (level 5 of Haskell's scheme) and theories of creativity (level six in Haskell's scheme).

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Chapter 3

Method

The research literature on the topic of learning transfer is expansive, diverse, and inconsistent. Several studies have been conducted within the fields of experimental and cognitive psychology, educational psychology, as well as the more practitioner-based human resources development (HRD) arena. In their endeavor to examine the same phenomena, the different studies have used both quantitative and qualitative approaches.

According to Field and Marck (1994) including studies with epistemologically different methodologies is not advised due to the difficulty of developing sound theory. Jensen and Allen (1996) agree and suggest that mixing qualitative approaches reduces the ability to interpret similar findings as confirmatory. Other researchers have been cited as holding the opposite view. In this view, including different methods will contribute to more depth and breadth of the description of the phenomena under study (Paterson, Thorne, Canam and Jillings, 2001). Further, Paterson, et al. propose that the epistemological approach must be consistent, however, they state that:

> Many of those arguing against inclusion of different kinds of research do so because their synthesis strategies rely entirely on aggregating findings of similar kinds of studies and because they have no analytic mechanism by which to capitalize on the implications of variations within the larger body of research-based knowledge. (p. 40).

Creswell (1994) is in agreement with the latter view. He states that the use of mixed methods was "originally intended to 'triangulate' findings in order to demonstrate

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convergence in results" (p. 189). Further, he states that the purpose is to find new perspectives and to add scope and breadth to our understanding of a phenomenon.

My study's intent is to garner the type of scope and breadth Creswell discusses; therefore, it is critical that both qualitative and quantitative studies be included. Following Paterson et al and Creswell's advice, I will apply a meta-synthesis approach in order to develop a more informed understanding of the learning transfer phenomena within the context of management development interventions.

Meta-synthesis involves the systematic analysis and synthesis of primary studies, and is not merely aggregative; but rather it is an inductive and interpretive research approach (Noblit and Hare, 1988). A systematic review offers a comprehensive summary of what is, and is not, known about different management development interventions as they pertain to far and/or creative learning transfer.

In contrast to meta-analysis, which utilizes a quantitative methodology to examine quantitative research studies with an emphasis on the reduction of data (Zhao, 1991), and meta-ethnography, which is a qualitative methodology applied to only qualitative research studies (Huberman & Miles, 1994), meta-synthesis is a qualitative methodology that uses both qualitative and quantitative studies as sources of data, and is classified under an interpretive or phenomenological research paradigm (Paterson, Thorne, Canam and Jillings, 2001). The qualitative paradigm is most applicable to meta-synthesis given the methodology seeks to "describe and understand phenomena as wholes, or at least in ways that reflect their complexity" (Guba, 1978, p. 14).

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Research Design

A qualitative meta-synthesis has been described as synthesizing the results of primary studies through the analysis of data (outcomes), methods used, and theory applied (Paterson, Thorne, Canam and Jillings, 2001). Further, Paterson, et al, contend, "meta-synthesis represents the creation of a new interpretation of a phenomenon that accounts for the data, method, and theory..." (p. 10). To support the analysis of data, methods, and theory, I will use an ecological triangulation approach in my research design (Banner, 2003). More specifically, the notion of triangulation will be exemplified, and an ecological sentence synthesis framework will be applied for data analysis. This is an emergent design whereby I will be able to make ongoing decisions regarding data selection, observation of patterns and themes, and the creation of new interpretations (Noblit & Hare, 1988).

The concept of triangulation is viewed as foundational in qualitative inquiry (Creswell, 1994). Denzin (1970) defines it as the use of a combination of methodologies when studying a certain phenomena. Denzin suggests that "multiple methods should be employed since no method is ever free of rival causal factors and thus seldom leads to completely sound causal propositions...." (p. 26). Webb, Campbell, Schwartz, and Sechrest (1966) support this and state "once a proposition has been confirmed by two or more independent measurement processes, the uncertainty of its interpretation is greatly reduced. The most persuasive evidence comes through a triangulation of measurement processes" (p. 3).

Denzin (1970) suggested that the use of triangulation equates to what he called the "multiple-paths-to-theory approach" (p. 74). One implication of this approach is that

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conceptual definitions (more vague than operational definitions) may more readily permit comparative analysis of the construct, whereas an operationally defined (more narrow) construct may overlook important characteristics. This is supported by Cooper (1998) who suggests that research with the purpose of synthesis (versus primary) can "begin a literature search with only a conceptual definition and a few known operations that measure it" (p. 14). It is an organic and inductive process that allows operations to emerge as the literature is analyzed and synthesized.

In terms of meta-synthesis, triangulation can consist of the strategies of multi-data sources, multi-data collection methods, multi-researchers, and multi-theoretical approaches (Banning, 2003). Expanding the concept of triangulation to include an ecological approach, Banning concluded that "the ecological triangulation approach focuses on theory, method, interventions, persons, settings/environments and outcomes and the transactional relationship among these variables" (p. 1).

According to Banning (2003), the heart of the ecological triangulation approach is "the development of procedures that focus on the mutual interdependence among theory, method, and findings—findings that provide insight into what interventions work to produce what outcomes with what persons in what settings or environments" (p. 1).

In this light, the ecological sentence synthesis framework will be used as a guide. This framework is based upon inductive analysis and "the principle of enumeration to reach a general conclusion about a group of studies" (Banning, 2003, p.1). Banning (2003) suggests that an ecological framework should be applied when the research study is examining the question, "What are the mutually interdependent relationships among

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behavior, persons and environments?" (p. 1). The question posed is a broad and general guide that will facilitate the observation of patterns and creation of new interpretations.

Sample Selection

The primary studies used in this meta-synthesis were selected based on five general inclusion criteria. First, the research study is focused on organization-sponsored management development interventions. Studies included under this criteria are encompassed under two categories; research studies that are conducting and measuring the effects of an actual intervention, and research studies that are investigating the effectiveness of overall management development systems. Second, the studies were based on research in the United States, Canada, the United Kingdom, Australia, and other western European countries. Initially, this was not the case.

The original intent was to include only those studies found within the United States. However, after reviewing a small sample, I discovered that there was a richness that would have been lost due to exclusion of studies outside of the United States. Third, the results can be considered consistent with the adaptive (far), and/or creative levels of learning transfer as defined by Haskell (1998; 2000) and Ford & Weissbien (1998). Fourth, the sample will consist of articles published in peer reviewed journals and doctoral dissertations. Estebrooks and colleagues (1994) have noted that dissertations are appropriate in a meta-study because they adhere to the standards of academic rigor required by universities, whereas published journal articles are reduced to a more tightly constructed message based on editorial parameters, and therefore eliminate potentially important data elements. Finally, the fifth criteria applied to sample selection included only those studies published between 1995 and 2005.

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I did not predetermine the number of studies to be used in my research, as the research was emergent and therefore studies were added as the research progressed (Noblit and Hare, 1988). Further, Noblit and Hare suggest rather than emphasizing the need to conduct an exhaustive search, selection of studies should focus on what can be learned from integrating the primary studies selected.

Data collection

This study utilized a systematic review of primary research as a method to comprehensively explore existing studies of management development interventions as they pertain to far or creative transfer. A protocol was used (table 3) that outlines the stages of a systematic review. The protocol was modified from the work of Baldwin, Wallace, Croucher, Quilgars and Mather (2002).

Search Strategy. A variety of electronic databases were used to identify relevant studies including: Ebsco Business Primer, Educational Resources Informational Center (ERIC), Digital Dissertations and Dissertation Abstracts International, and Psych Info. Searches included a scan of title, abstract and descriptors that were consistent with five inclusion criteria (listed under sample selection). Search terms initially used are listed in the table below.

o Training transfer	o Management training	o Organizational innovation
o Learning transfer	o Far transfer	o Analogical transfer
o Management development	o Organizational creativity	

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After studies were collected and placed into the matrix, a second search was conducted in order to draw upon studies focused on far and creative learning transfer in an organizational context using the terms listed in the table below.

o Double loop learning	o Organizational problem solving
o Deep learning	o Organizational thinking
o Deep processing	o Organizational Reasoning

In addition to the database search, I scanned bibliographies in order to source relevant studies. Further, I elicited data sources for methodological resources from my dissertation methodologist, Dr. James Banning and topical sources from my advisor, Dr. Jerry Gilley.

Data Analysis

According to Miles and Huberman (1994), qualitative data analysis consists of data reduction, data displays and conclusion drawing/verification. Data reduction refers to "the process of selecting, focusing, simplifying, abstracting, and transforming the data..." (p. 10). For the purposes of this study, a literature review protocol was used (see table 3), and a matrix was designed whereby data was displayed (see data display below) in order to provide "an organized, compressed assembly of information that permits conclusion drawing and action" (p. 11). The matrix was the foundation for reviewing and synthesizing primary studies (see Appendix A). Finally, conclusion drawing and verification refers to making decisions about meaning. Miles and Huberman caution the researcher that these conclusions are generally made starting at the point of data collection and continue through the cycle of analysis. Therefore, it is critical that "the

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researcher hold these conclusions lightly, maintaining openness and skepticism" (p. 11). Further, the authors contend that conclusion drawing is not enough; conclusions must be verified. For the purpose of this study verification will take the form of re-reviewing details in the primary studies, or point to replication of findings between studies (Miles and Huberman). The authors also maintain that verification will reinforce interpretations made and thus support validity.

Inclusion Criteria. During the data collection process, I identified and reviewed an abstract, and subsequently made determinations regarding whether or not they fit within the five inclusion criteria outlined under sample selection. Further, I did *not* include studies if it was a masters thesis (versus a doctoral dissertation); the study focused on near transfer versus far transfer, as well as those that focused on far transfer, but included subjects other than managers (e.g., students in an MBA program); or I was simply not able to obtain a full text version of the study.

Data display. Once inclusion was determined, the studies were placed in a matrix (MS Excel spreadsheet), which was created to capture and record categorical data elements. This enabled me to systematically review data elements and easily transform the data into the ecological sentence framework. Category headings for each column included the following:

- Article ID (number assigned to track studies)
- Article Title
- Author
- Date
- Publisher
- Source/Citation
- Participants
- Variables / Questions examined
- Method (design, methodology, analysis, instruments used)
- Results

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- Effect Size (for quantitative studies)
- Setting
- Treatment characteristics
- Theoretical Framework

Quality Assessment Criteria. A review of primary studies must include a critical assessment regarding the quality of the primary studies (Baldwin, Wallace, Croucher, Quilgars & Mather, 2002). Miles & Huberman (1994) suggest that "quality control" is a matter of consistency and answering the question, "have things been done with reasonable care?" (p. 278). In an attempt to insure quality control, this study utilized the Design and Implementation Assessment Device (DIAD) (Banning & Cobb, 2003). The DIAD enabled me to conduct a review of primary studies in a way that attempted to limit bias through quality control (Mays & Pope, 2000). Bias may be present by "reporting findings from poorly conducted studies, from the reviewers own position in relation to the issue at hand and from failing to assess the complete range of published and unpublished work on the subject" (Baldwin, et al., p. 2). Further, according to Baldwin, et al., a systematic review attempts to reduce these sources of bias by explicating decisions made regarding sources (i.e., inclusion criteria), how quality was assessed (i.e., the DIAD), and how the outcomes from the studies were combined (i.e., ecological sentence framework). Table 3 outlines the review protocol utilized in this study.

Based on the inclusion criteria and other reasons described for excluding studies, I have identified 31 studies for inclusion in my meta-synthesis. The majority of studies excluded were those that included a sample population other than manager and lesser degrees of transfer (level 1-4 on Haskell's scheme). There were also studies excluded due to lack of quality as defined by the DIAD (e.g., did not meet standards regarding validity as listed on the DIAD).

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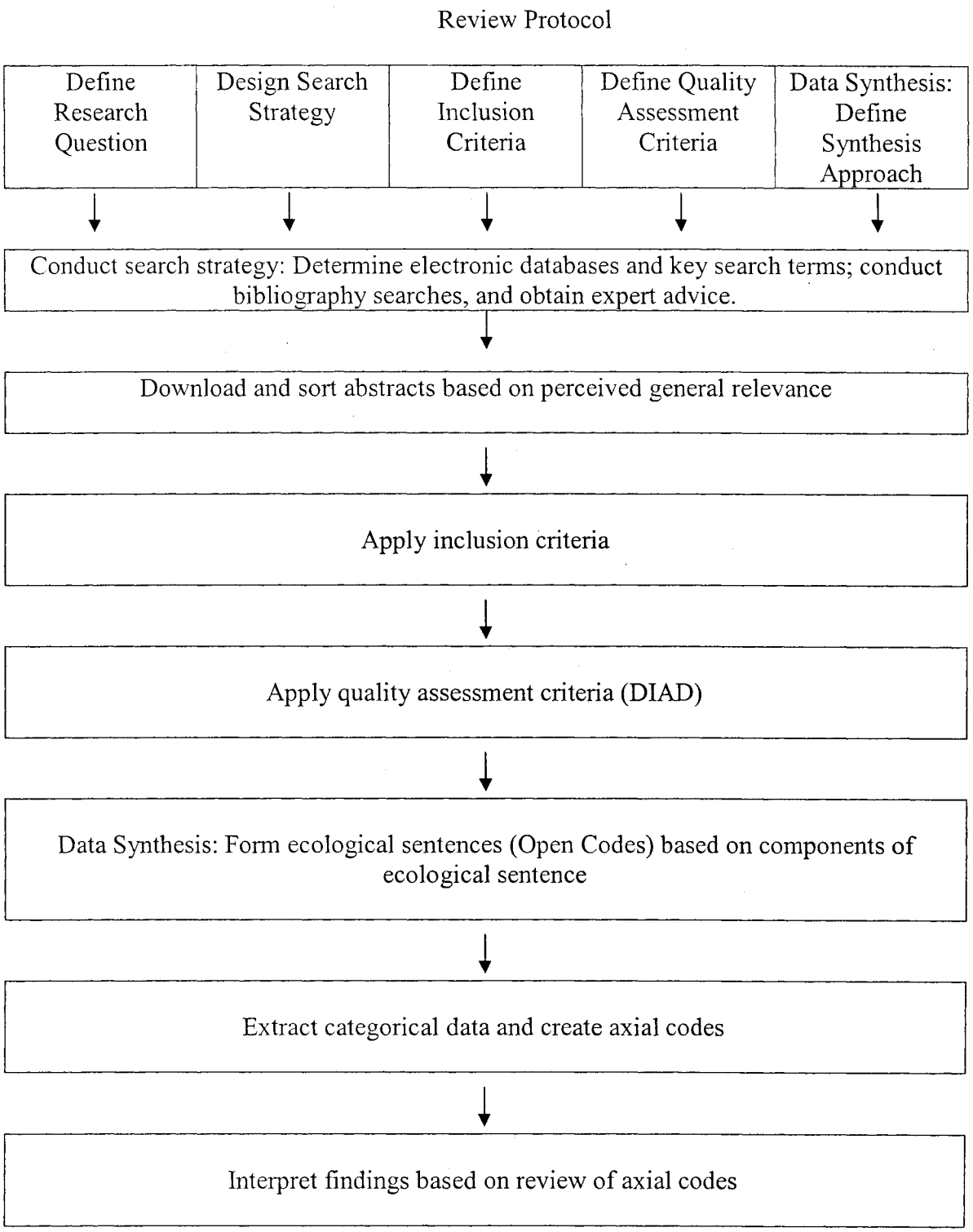

Table 3, modified from protocol used by Baldwin, Wallace, Croucher, Quilgars & Mather, (2002).

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Data synthesis. The choice of data analytic approaches should be consistent with the research question (Paterson, et al., 2001). Therefore, an inductive approach was used whereby an ecological sentence synthesis framework, which is built on inductive analysis, was utilized (Banning, 2003). According to Banning, ecological sentences can be utilized for both qualitative and quantitative studies. Also, as an inductive process, it will include constant comparative analysis, i.e., the progression from open codes to axial codes (Banning).

Following the procedures outlined by Banning (2003), data will be analyzed using a two-step process. First, an ecological sentence will be written for each study based on the category headings outlined previously. The sentence structure will replicate the research question: *What* management development interventions have demonstrated *what* results in terms of far and/or creative learning transfer, with *what* learner characteristics, in *what* settings, and using what theoretical framework? The sentences will function as open codes. The second step will be to use the open code sentences to create axial codes under the following categories: intervention, sample or learner characteristics, research method, and theory. The third and final step will be to synthesize the data by using the axial codes to interpret and summarize overall findings.

Synthesizing both qualitative and quantitative research studies is viewed as essential as well as problematic (Dixon-Woods, Fitzpatrick & Roberts, 2001). To make the synthesis of quantitative studies more feasible, effect sizes will be calculated (Creswell, 1994). Lipsey & Wilson (2001) support the use of effect size, and state that results found in a quantitative study "must be recorded in the form of an effect size value with an accompanying profile of associated information describing the particulars of that

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effect size" (p. 81). Also, Lipsey & Wilson suggest that in cases where results from primary quantitative studies "are not easily represented by a common effect size statistic, other data may be reported that can be used...such as a correlation matrix upon which a multiple regression is based" (p. 15).

According to Dixon-Woods, Fitzpatrick & Roberts (2001), qualitative research has been marginalized in systematic reviews due to methodological prejudice, which refers to the perceived lack of validity with regard to qualitative evidence. A second reason the authors propose is the perception of methodological difficulties, which stem from the view that there are still too few explicit epistemological and methodological rules and techniques. Further, the authors contend that the identification of suitable studies is perceived as problematic. Systematic review literature is limited in terms of how qualitative evidence should be searched for and compiled (Dixon-Woods, et al.).

With respect to the synthesis of quantitative and qualitative research studies, Dixon-Woods, Fitzpatrick & Roberts (2001) maintain that synthesis should be broadly understood as summarizing available studies, whether that involves pooling data (quantitative) or involving narrative (qualitative). Further, the authors contend that it is necessary to exclude studies (regardless of quantitative or qualitative approach) that are of insufficient quality; and therefore cannot "fully contribute to a synthesis of evidence" (p. 130).

Validity

Qualitative research insures validity through trustworthiness (Creswell, 1994) and quality (Miles & Hubberman, 1994). For this meta-synthesis, trustworthiness has been established through inclusion criteria that were predetermined at the outset for this study.

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Further, the Design and Implementation Assessment Device (DIAD) Version 0.3 (Banning and Cobb, 2001) was used to analyze studies in terms of quality, and therefore further restrict inclusion of studies that were not trustworthy. The DIAD is a tool guided by four assumptions:

> Qualitative designs vary across studies in ways that affect confidence (trustworthiness) that can be placed in their results and qualitative designs have more than one dimension. The third assumption, that studies with different purposes require different assessments, explicitly states that qualitative "descriptions" are going to evoke issues of design and implementation which are different than other purposes. Finally, the last assumption that supports Campbell's approach of assessing the validity of inferences can also be applied to qualitative designs within the general notion that assessment of "threats" is also a viable concept when evaluating qualitative designs. (p. 1).

There are eight composite questions that were used to assess both the quantitative and qualitative studies used in this meta-synthesis (see table 4). Each question is focused on validity: construct, internal, external, and statistical. The preponderance of studies excluded in my review were due to lack of construct validity and statistical validity, more specifically, the findings were not adequately described or the completeness of reporting was not acceptable.

In the case of external validity, the majority of studies (14) did not meet this standard in terms of testing within sub groups. Given the number of studies impacted, I made the decision to be lenient with regard to this question, and disregard those that did not completely meet this particular standard.

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	DIAD	Qualitative Translation
	Construct Validity:	
1	Intervention	o Was the phenomenon/intervention adequately described?
2	Outcome Measures	o Were findings adequately described in terms of related literature?
	Internal Validity:	
3	Sample Selection	o What sampling strategy was used?
4	Uncontaminated by other Events	o What measures were used to establish credibility of the study?
	External Validity:	
5	Sampling	o What measures were taken to impact transferability? o Was the sample data compared to demographic data? o Was time sampling employed? o Were prolonged and varied field experiences included in the study? o Was the concept of conceptual generalization employed?
6	Testing within Subgroups	o Were findings, thematic frameworks associated with any sub groupings within the participant pool?
	Statistical Validity:	
7	Effect Size estimation	o Level of transparency and craftsmanship in analysis procedures?
8	Completeness of Reporting	o Were audit trails of the study provided?

Table 4: DIAD

Source: Banning, J. and Cobb, B. (2001). Design and Implementation Assessment Device (DIAD) Version 0.3, Colorado State University unpublished paper.

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Examination of the construct of learning transfer has included both quantitative, qualitative, or a mixed approach. I applied a meta-synthesis approach in order to develop a more informed understanding of the learning transfer phenomena within the context of management development interventions. This meta-synthesis involved the systematic analysis and synthesis of primary studies in an inductive and interpretive manner (Noblit and Hare, 1988). A systematic review offered a comprehensive summary of what is, and is not, known about different management development interventions as they pertain to far and/or creative learning transfer. In order to ensure quality, the Design and Implementation Assessment Device (DIAD) Version 0.3 (Banning and Cobb, 2001) was used to analyze studies and therefore restrict inclusion of studies that were not trustworthy (lacked validity).

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Chapter 4

Results

This chapter presents findings from the meta-synthesis that inform far and/or creative learning transfer within the domain of management development in organizations. There were thirty-one studies that were included in this meta-synthesis; fifteen of which were doctoral dissertations and sixteen published peer reviewed journal articles. Of these studies, 19 were quantitative, of which 11 were quasi-experimental and six were true experimental (random assignment to treatments). Two studies were quantitative, correlational, seven studies used a qualitative design with a case study approach, four studies used a mixed methods approach (quantitative and qualitative) and one utilized an Action/Practitioner research design.

The chapter is divided into three sections. First, I summarize the characteristics of the research studies using an ecological sentence structure (Banning, 2003). In other words, what management development *intervention* obtained what *results* with regard to far and/or creative transfer using what research *methods*, with what *persons*, in what *setting*, and using what *theoretical framework*? Second, I identify patterns interpreted from the axial coding procedure with regard to the interventions, methods, sample and theoretical frameworks. I conclude the chapter providing a summary of the overall themes that emerged from the primary research studies reviewed in this meta-synthesis.

Ecological Sentences

As stated in chapter three the ecological triangulation approach is "the development of procedures that focus on the mutual interdependence among theory, method, and findings—findings that provide insight into what interventions work to

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produce what outcomes with what persons in what settings or environments" (Banning, 2003, p. 1). In this light, the ecological sentence synthesis framework was used as a guide in this meta-synthesis in order to examine patterns between the primary studies and create new interpretations (Banning, 2003).

The questions to be examined is, What management development *intervention* obtained what *results* with regard to far and/or creative transfer using what research *methods*, with what *persons*, in what *setting*, and using what *theoretical framework.* Table five provides the ecological sentences for the primary studies in this meta-synthesis.

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Ecological Sentences

Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Dissertation: Smilonich, D. (1999)	Large Scale Intervention	Behavior changes were attributed to org. learning; however, learning that occurred was heavily context-laden and counter-cultural and therefore not readily transferable to different contexts. The system remained essentially unchanged. As a result, the behavioral changes during the LSI process were not sustainable and the system quickly returned to its former state of equilibrium.	Action/Practitioner Research	Mixed – senior and middle managers, and whole organization	State Government Department of Transportation	Organizational Learning; Double loop learning
Dissertation: Hall, Melinda (2001)	Leadership Development Retreat	Findings propose that deep learning occurs as a result of a unpredictable and dynamic interplay amongst six components that interact with one another (inducted through thematic coding): catalyst, context, conditions, content, capability, and culture. It is the authors view that "the occurrence of an awareness and consequent reflection on that awareness are as important as behavioral manifestations as indicators of deep learning.	Qualitative / Case Study	Mixed – managers and non-managers	Pecos River Learning Center	Deep learning/Double loop learning
Dissertation: Vicker, D. (1998)	General Management Development	No evidence to suggest that any improvement was made between the pre and post test of participants in interpersonal communication competence in this study; highly likely that experiential methods had *no* direct impact on how well the participants learned the content.	Quantitative / Experimental	Mixed – mid-level managers and supervisors	State & County training Center (FL government)	Experiential / Adult Learning

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Dissertation: Benischek, S. (1996)	General Management Development	The mgmt dev program as a method of changing locus of control orientation was shown to be ineffective as a change agent; Three relationships previously established in the literature have been reconfirmed in the current study: training programs appear to attract employees who are more internal, managers are more internal and satisfied than non managers, and job satisfaction and age are positively related.	Quantitative / Experimental	Mixed – managers and non-managers	Southwestern University in U.S.	Social Learning Theory – Rotter's Locus of Control
Antonacopoulou, E. International Journal of Training and Development (1999)	General Management Development	Managers perceived learning to result from four main sources: training, experience, modeling others in the workplace, and coaching. Further, and perhaps more importantly, managers across the 3 banks perceived training and learning as closely interconnected. Results point to historical and cultural reasons for the organizations, and perhaps industry, reinforcing the view that training interventions are intended to facilitate learning in order to enhance performance; managers feel insecure about learning if it is not through training. Responses regarding the extent to which they feel they have learned from training interventions and were able to utilize knowledge acquired from training suggest that significant proportion of managers claim that in most cases they are not in a position to utilize the learning, and experience difficulty applying the knowledge acquired.	Qualitative / Case Study / Longitudinal	Mid-level managers	Across three Retail Banks in UK	Organizational Learning & Self Directed Learning

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Tracey, J., Tannenbaum, S., Kavanagh, M. Journal of Applied Psychology (1995)	General Supervisory Skills	Results support that work environment is important for the application of newly acquired behavior and skills. Various training related cues in the work environment can facilitate or hinder the application of newly trained behaviors for both new and experienced supervisors. In addition, salient characteristics were found to exist that were not directly related to training, but more generally related to learning, that had a direct effect on the transfer of training. Behaviors that send a message that learning is important and valued, and cues that suggest the org is innovative and competitive, appear to encourage the application of newly trained behaviors. Also, a continuous learning culture can influence specific behaviors associated with a particular training program. Values associated with continuous learning are embodied in many of the prevalent approaches to org change, such as TQM. Moreover, the level of aggregation analysis showed that at least in this sample, training climate and learning culture tend to exist at the work group level. That is, people who commonly interact with each other at work are most likely to share perceptions of the work environment. Findings suggest that interventions that target supervisors, coworkers, and others who interact with trainees may yield the greatest dividends toward establishing a supportive training and learning environment.	Quantitative / Quasi Experimental	Mixed – Store managers, Assistant managers, and supervisors	Private organization that owns and operates 77 supermarkets in four northeastern states – offsite company owned training center	Transfer Environment – Conceptual model consisting of organizational climate and continuous learning culture.

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Dissertation: Wyszynski, T. (1998)	General Supervisory Skills	Managers self-reported significant improvement in their own performance from the pre and posttest scores. Improvement was noted in their ability to communicate, problem solve, and manage schedules and deadlines. Self reports were hypothesized to be positively associated with the subordinates rating of improvement in management skills. However, it was not supported. Improvement in management relations based on the subordinates evaluation of manager performance, was hypothesized to increase the probability of reducing the frequency of grievance filing rates. This was strongly supported.	Quantitative / Quasi Experimental	Mixed – front line managers and supervisors	Global company characterized by an inherently diverse work force that consists of union and non union workers. Interested in maintain good industrial relations with the United Auto Workers Union (UAW) and internal communications.	No theory – literature: Holton (1996) suggests need to design an approach to evaluation that would consider measuring the different levels of the evaluation simultaneously. Relationship between mgmt development and org performance, as well as need for expanded theory on evaluation and measurement criteria in organizations is discussed.
Donohoe, T., Johnson, J. & Stevens, J. Employee Assistance Quarterly (1997)	General Supervisory Skills / Employee Assistance Training	Post test scores were significantly greater than at pretest and delayed post test; delayed post test scores were still significantly greater than at pretest. Evidence suggests that some information is lost, however the overall training method appears to be effective in providing the information to the supervisor. It is believe that the small group helped with learning acquisition. Also problem solving power of small groups, value of interaction on learning, and the immediate feedback relative to their responses as measured by the training protocol.	Quantitative / Quasi Experimental	Supervisors	Federal government facility in rural area.	Literature – predictors of utilization and referral (to EAP) behavior in supervisors; performance management

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Cromwell, S. & Kolb, J. Human Resources Development Quarterly (2004)	General Supervisory Skills / Peer Support Network	Showed that trainees who reported receiving high levels of organization, supervisor, and peer support reported higher levels of transfer of knowledge and skills. T-test results indicated that trainees and their supervisors did not differ in their perceptions of level of transfer of skills or amount of organizational or direct supervisor support received by the trainees. All four work environment factors have a statistically significant positive correlation with transfer. When data were segregated and examined according to length of time since trainees had completed training, findings were still significant for organization, supervisor, and peer support but only at the one-year point, not at one month or six months. Participation in a peer support network was not significant at any of the three points of time; trainees indicated that lack of time and lack of management support and buy-in were significant barriers to transfer.	Mixed Methods Design (Quant/Qual)	Supervisors – front line	One Department within Large northeastern University	Transfer Environment; Team member exchange theory; social networks theory
Dissertation: Kiehl, J. (2004)	Informal / Discontinuous Learning Events	Produced a model of learning wherein (a) willingness to adapt is antecedent to learning at the organizational level, (b) mental maps are influenced by both intrapersonal and interpersonal processes, and (c) emotion is as central as cognition relative to the construction of both willingness and mental maps.	Qualitative / Case Study / Grounded Theory	Mixed – executives, managers, and non-managers	Single plant; global manufacturing firm	Organizational Learning

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Dissertation: Darnell, S. (2003)	Informal / Discontinuous Learning Events	Findings suggest that learning processes did change as the company grew in age and size. Participants described learning processes in terms of observable changes in the org including channels of communication, decision making processes, and socialization. Change events included: TQM program, Downsizing, Being acquired by Outdoor Adventurers, and integration of an additional catalog company, Endurance Sports. There was an increased tendency to learn through formal organizational processes, increased reliance on explicit knowledge, while the tendency to share tacit knowledge through informal processes decreased. Further, findings suggest that single-loop learning occurred with each of the four growth events, and double-loop learning occurred with the second and fourth growth events, one of which was experienced as continuous change and the other as discontinuous change.	Qualitative / Ex-Post Facto Case Study	Mid-level managers	Natural Environment, Direct Marketing Company	Organizational Learning & Organizational Change

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Cope, J. Journal: Management Learning (2003)	Informal / Discontinuous Learning events	Illustrates that discontinuous events experienced by all entrepreneurs in the study stimulated distinctive forms of 'higher-level' learning--learning that is fundamental to the entrepreneur in both personal and business terms. When individuals faced such non routine situations their learned responses and habitual ways of behaving proved ineffectual. Forced individuals to question their taken-for-granted assumptions and reframe their understanding of the situation at hand. Or, in other words, opportunities or crises. Different levels of learning – from more practical, routine to adaptive, and finally learning that generates new understandings and new cognitive theories for action thereby forcing individuals to question their established ways of doing things. This notion has been encapsulated within such terms as lower level and higher level learning; adaptive and generative learning; as well as single and double loop learning. Of significance is the recognition that higher order forms of learning have the capacity to challenge or redefine what has been described variously as an individual's mental models or theories of action. Differentiating between different levels of learning is very difficult, as they remain inextricably linked. Identifying where adaptive learning stops and generative learning starts is difficult and often relies to a certain extent upon the subjective assessment of the analyst.	Qualitative / Case Study	Executives / Entrepreneurs	Small business ownership / growth	Mezirow's transformational learning; Double loop learning

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Enos, M., Kehrhahn, M., Bell, A. Human Resources Development Quarterly (2003)	Informal / Comparison with Formal	Results suggested that informal learning is predominantly a social process and that managers with high levels of proficiency who experience low levels of coworker, supervisor, and organizational support learn managerial skills mostly from informal learning and transfer learning more frequently. There was a lack of a significant positive relationship (r=-.01) in this study between extent of informal learning and the transfer of learning. Also, transfer climate factors did not play a significant role in how managers learned and transferred skills. Authors believe meta-cognitive knowledge and self regulation work together in a dynamic fashion to produce effective learning (vs. climate). Finally, regarding proficiency as a product of informal learning and the transfer of learning--results suggest that proficiency is a result of informal learning and that proficiency and transfer of learning have a strong reciprocal relationship.	Mixed methods Design (Quant Non-Experimental /Qual)	Mixed – managers across departments	Large subsidiary of 100 year old fortune 100 company in New England	Informal Learning Theory; Social practice theory; Learning transfer theory
Dissertation: Rodenbaugh, M. (2002)	Informal / Experiential Learning	77% of participants showed changes in mental models of authority immediately after the workshop; 11 failed to maintain the changes after 6 weeks. (27%) made a change and held the change. Findings suggest dependent and interdependent individuals are more likely to change their mental models. Counter-dependent participants may change but are likely to return to their original position. Individuals entered the workshop primarily with a counter dependent mental model; the workshop raised the awareness of 53% of participants who changed to an interdependent stance.	Mixed – Q-methodology (Q-Sorts)	Executives	Hilton Hotel, NJ	Organizational learning & Social Constructivist Learning Theory

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Warr, P. & Bunce, D. Personnel Psychology (1995)	Informal / Self-Directed Learning	learning score was significantly Significant associations were found between learning score and changes in rated job performance; mean job performance increased primarily between time 1 and 2. Trainees reported somewhat more use of an analytic rather than behavioral learning strategy. Performance change after training--multivariate analysis of variance on the three occasions indicated overall trend across the 7 months was strongly significant. Only one difference was significant between time 2 and 3--an increase in ratings of wider job knowledge. Mean job performance scores between time 1 and 3 was significant. Only analytical strategy was found to be significantly correlated with learning (versus behavioral). Previously measured general attitude and specific motivation were both positive; and learning task anxiety was greater than interpersonal anxiety.	Quantitative / Quasi-Experimental	Junior Managers	UK Organization – Four geographically separated depts. Worked with local Universities	Social Cognitive Theory and other constructs from literature pertaining to individual trainee characteristics as it pertains to transfer
Dissertation: Pfeifer, L. (2004)	Informal / Self-Directed Learning	This study demonstrated that, in measuring skill and knowledge acquisition, a new remote delivery method, Self-Directed Motivation System (SDMS), was as effective as instructor-led workshop delivery. In terms of transfer and increasing managers' intrinsic motivation towards training content, SDMS was more effective than the instructor-led workshop.	Quantitative / Experimental	Mixed – VP, Director, Sr. Manager and Supervisors	SDMS – remote; instructor-led – didn't say.	Social Cognitive Theory, Intrinsic Motivation theory

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Dissertations: Stromei, L. (1998)	Informal / Mentoring	The mentees showed a significant improvement on their leadership effectiveness and flexibility from the pre-test to the posttest. Other variables tested were number of meetings between the pairs, quality of projects participated in, availability of the mentor to the mentee, number of phone calls and outside meetings, personality, gender, age and psychosocial benefits received as well as overall satisfaction with the program. Protégés noted importance of having a mentor that was available to them, one that shared the same values and they could feel good about modeling their leadership behavior; a mentor who would work with them on projects that would help them gain the skills and expertise they need. Many of the protégés, who achieved a high level of success in their mentoring relationship, as defined by an increase in overall leadership skills, psychosocial benefits, and satisfaction, mentioned that they started their mentoring relationship in a problem solving mode. The common themes that ran through interviews was that the initial stages of development of their relationship, they were able to establish rapport and trust quickly because they were focused on solving a problem.	Mixed – Quant/Qual	Mid-level managers	Organization with 60% technical / scientific positions with large retirement eligible population in the management ranks.	Social Learning Theory

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Dissertation: Bostain, N. (2000)	Interpersonal Skills / Behavior Modeling	Mean scores between self-evaluation, Subordinate evaluation and supervisor evaluation were positively correlated. ANOVA using the transfer of training as the dependent measure showed a highly significant main effect for treatment condition. There is a statistically significant difference between the control group and the experimental group concerning demonstration of the key actions in the workplace, as perceived by the trainees, their supervisors, and their subordinates. The results of the present study support the use of behavioral modeling in industry to improve supervisory interpersonal skills.	Quantitative / Quasi-Experimental	Supervisors	Global Aerospace company	Social Learning Theory

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Hunt, J. & Baruch, Y. Journal of Management Development (2003)	Interpersonal Competency	Training has modest but positive outcomes. Results indicate significant impact on some, but not all, of the competencies and skills under study. No cohort failed to improve its mean on at least some questions; however, it was clear that Refinement, rather than radical change is possible. The skills most responsive to training were easily described, had clear objectives and outcome criteria and, in practice, could be segmented into a step-by-step routine based on a memorable model or theory. In contrast, the so called "soft and feely" skills proved to be the most difficult to improve statistically and provide some evidence for the view that emotional intelligence should be considered as a personality variable. For example, sensitivity to the pressures on others is not easily learnt by the insensitive. This makes them more difficult to teach and hence the weaker response from direct reports compared with those skills for which a specific theory-based well tested, step by step routine is available. Where a specific step by step routine based on a simple theory was offered, the rate of learning was enhanced greatly. Two skills appeared to be less responsive to training than any others. Decision making (influenced by cognitive skills) and giving one to one feedback skills. Training may have little impact on ways of thinking. Similarly, skills used in intimate interpersonal relationships, such as giving feedback to others, may also be more difficult to certain people such as introverts. Their personality makes them less responsive to certain forms of training, simply because these skills are difficult for them to learn.	Quantitative / Quasi-Experimental	Executives	London	Argyris' Interpersonal Style Theory

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Dissertation: Waggoner, E. (2001)	Interpersonal Skills	Treatment and comparison training group's post scores indicated significant increases resulting from the training (control group had no training; no change in scores). The training group that received the adjunct training (follow up to original training) perceived the training eased their transition into a management position and improved their ability to transfer the management skills to their new job to a significantly greater degree than the group that received only the initial phase of training.	Quantitative / Experimental	Supervisors / Jr. Managers	NASA Research Center	Adult Learning Theory
Dissertation : Louis-Slaby, M. (2004)	Multi-Source / Multi-Rater (MSMR)	Predicted that individuals with performance gaps would likely try to mend these disparities by seeking development and improvement, this was not the case. Instead, the results acknowledge that previous development and performance successes had the potential to predict future successes (i.e. past behavior will predict future behavior). Thus, strong performers would engage in development activity to become even stronger. Despite somewhat weak effect sizes, predictive power associated with peer and employee performance ratings is interesting. Peer and employee ratings showed a significant, positive relationship with feedback acceptance and organized approach to development, .05 and .01 respectively. Results indicated that peer and employee ratings were the strongest predictors of pursuit of activity in a development program. The results are of particular interest because peers and employees, with respect to performance evaluations, generally have no input. Typically, managers maintain evaluative control relative to performance appraisals.	Quantitative / Experimental	Mixed – managers at all levels	Southeastern University	Performance and Personality – Conceptual Model

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Seifert, C., Yukl, G., McDonald, R. Journal of Applied Psychology (2003)	MSMR	Managers in the feedback workshop increased their use of some core influence tactics with subordinates, whereas there was no change in behavior for the control group or for the comparison group. The feedback was perceived to be more useful by managers who received it in a workshop with a facilitator than by managers who received only a printed feedback report. The core tactics that demonstrated a significant change were consultation and collaboration. There was no significant effect of the feedback workshop on the other core tactics. Also evaluated the effects of a feedback facilitator who was not the manager's boss. Results show that having a competent, supportive facilitator increases the perceived utility of the feedback and results in more behavior change for the managers.	Quantitative / Experimental	Mid-level managers	Financial Institution – offsite training facility	Control Theory
Tyson, S. & Ward, P. Management Learning (2004)	MSMR	Senior mgrs showed significant improvement in their score in every competency between 1997 and 1999. Personal impact and making things happen received a higher score than all other competencies. Strategic mgmt and inspiration showed the largest difference between 1997 and 1999. Competencies concerned with helping other to change were not so much improved. Results for Impact II (middle managers) showed no statistically significant improvements on any of the competencies. All scores increased to some extent, but not statistically significantly. Differences in I and I were: coaching providing to impact I involved more time than impact II. Middle managers were focused on operations, and the pressures of their work were of an obstacle.	Quantitative / Quasi-Experimental	Mixed – Senior managers and mid-level, front line managers	Local Government, UK	Organizational Learning; Social constructivist theory

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Bailey, C. & Fletcher, C. Journal of Organizational Behavior (2002)	MSMR	Overall there was mixed evidence. On average, competence was perceived to increase by all raters (self, bosses, first and second level subordinates); this increase was found to be significant for three out of the four rater constituencies (target managers and both levels of subordinate staff). The most dramatic change was seen in first and second level subordinates perceptions. Congruence may be due to subordinates changing their ratings rather than targets modifying their self assessments to be more in line with feedback received from others ratings, which is the intention underlying most feedback processes. Managers appeared to rely solely on their own self perceptions at time 1. Analyses revealed that the relationship between individual self assess and the formal performance appraisal ratings did become stronger over time, thereby supporting that participant in feedback will make the individual more aware of behaviors rewarded by the org. Whilst at face value the findings appear to largely support the use of MSMR feedback as prescribed in the literature, there is issue with the predictors of targets' revised self assesses.	Quantitative / Quasi-Experimental	Mixed – Managers at all levels in organization	Private sector service organization - UK	Theory of Self Image formation
Dissertation: Norman, S. (2003)	Trust	This study demonstrated that there are actions managers can take to improve employee trust and emotional well-being. Trust toward managers was associated with positive affect, pleasure at work, and job satisfaction, and feelings of less tiredness and anger. Literature has shown a strong relationship between trust and org commitment, but in this study a significant relationship was not found.	Quantitative / Experimental	Mid-level managers	Technology company – San Francisco Bay area	Organizational Trust – conceptual model

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Dissertation: Waddill, D. (2004)	Work-based learning / Action learning	Findings were that the action learning approach provides appropriate data to evaluate the course using Kirkpatrick's first three levels. In an open-group program where the problems presented may be self-development issues, the results for the organization (Level Four) are more problematic to evaluate. Reaction: Positive overall. Learning: The proof of learning is that all successfully employed the reflective inquiry approach which none of them had ever used before. In order to do so, they had to learn the question, reflection, and re-framing approach. Behavior: Each of the actions taken during or after the course indicates a change in behavior. 80% of the learners took action on the issue they brought to the class. The two that didn't initially take action, did so several months later (5 week accelerate course). Results: Most difficult to evaluate because not easily quantifiable. However there were indications of personal results. One person involved her subordinates in critical decision making processes. An employee commented, wow, that felt good to hear and be a part of the decision making. This reaction indicted positive results from new management behaviors.	Qualitative / Case study	Senior Managers	E-learning / online learning environment	Adult learning theory

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Kinman, G. & Kinman, R. Journal of Workplace Learning (2001)	Work-based learning	All participants completed the program successfully. However, they tended to experience difficulties with some aspects of the academic work. Analysis of assessment results and observations of lecturing staff suggest that participants did not wholly achieve learner independence, nor develop and maintain confidence in their academic abilities. More so specifically, whilst participants excelled in assessment tasks that involved well-practiced skills (such as the writing of concise business reports), more complex or less well defined assignments proved to be problematic. Difficulties were particularly evident with the development of academic abilities commonly required in assessments of work based learning, such as synthesis of ideas and critical reflection upon individual and org working practices and strategies. Motivational factors for participants via content analysis: "to "catch up" with younger, degree qualified managers, promotion prospects, an "insurance policy" managerial pressure (the program was voluntary, but perceived strong pressure from mgmt), peer competition, worries concerning diminished authority and credibility resulting from poor results or failure to complete, fear of diminished self image and of letting oneself down. intrinsic motivators were not a driving force to engage in learning, although some participants did have intrinsic interest emerge through the course of the program which seemed to result from increased interest and engagement with the subject matter, personal challenge, and confidence and feelings of mastery gained from initial academic success.	Qualitative / Case Study	Mixed – senior and middle managers across functional departments	UK subsidiary of major motor manufacturer	Motivation Theory (particularly Intrinsic motivation)

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Loewenstein, J., Thompson, L. & Gentner, D. Academy of Management Learning (2003)	Analogical Learning / Negotiation Skills	Analogy training led to better performance than separate cases or no training. Teams that compared cases (analogy training) were more likely to form a contingent contract in the actual, face to face negotiation than were those who analyzed the cases separately. Drawing comparisons between case studies facilitated learning the contingent contract schema from examples and applying it to a novel face to face negotiation situation. In other words, drawing comparisons facilitated understanding the general principle underlying the examples. Post hoc tests of mean differences confirmed that the analogy group contracts were of reliably higher value than those of both the separate cases and baseline groups, which did not differ reliably from each other. Also, found no reliable difference in generating contingent contracts between negotiations among intact teams and negotiations among solo individuals.	Quantitative / Quasi-Experimental	Mixed – Sales managers and MBA students	Management training courses	Analogical learning

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Basadur, M., Runco, M., Vega, L. Journal of Creative Behavior (2000)	Creativity training	Findings suggest how training in a complete creativity process increases a manager's ideation and evaluation skills. The training increases the acceptance of avoiding premature evaluation (convergence) of new solution ideas. This probably increases the acceptance of active divergence--the free wheeling generation of options without judging their quality or analyzing their relevance. Precisely why the preference for active divergence increases is unclear, but increasing the preference for avoiding premature convergence seems to encourage skill in ideational fluency (quantity of solution ideas generated). Increases in evaluation skills apparently emerge both directly from the attitude of preferring to avoid premature convergence and indirectly from greater ideational skill in generating more solution ideas. Greater ideational skill in generating high quality, more original solution ideas appears to be directly associated with greater evaluation skill in recognizing original, high quality ideas. Thus the key appears to be ideational skill in generating a quantity of ideas. This skill is directly and strongly related to ideational skill in quality of ideas generated and to evaluation skill in recognizing lower quality ideas.	Quantitative / Quasi-Experimental	Mixed – managers from manufacturing, finance, operations, employee relations, and distribution	International Consumer Goods Manufacturer	Osborn's Brainstorming Theory

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Source	Intervention	Results	Methods	Persons (Sample)	Setting	Theoretical Framework
Summers, B., Williamson, T. & Read, D. Journal of Occupational & Organizational Psychology (2004)	Decision Making	At least in this one domain, it appears to be more efficient to learn from formal education than from experience. Lecturers had the highest mean number of correct corporate failure predictions, closely followed by students, with seasoned (but not formally educated) credit managers and laypeople doing somewhat less well. Analysis revealed that both lecturers and students were able to predict corporate failure more accurately then laypeople. Moreover, there was a non-significant trend suggesting that lecturers outperformed managers. Lecturers and students generally outperformed credit managers on the prediction tasks, and the credit managers performed only slightly better than laypeople.	Quantitative / Quasi-Experimental	Mid-level managers	Financial / Credit Institution	No theory - Cognitive and Behavioral models discussed with regard to Expertise and Decision Making
Maddi, S., Kahn, S., Maddi, K. Consulting Psychology Journal (1998)	Resiliency Training (Hardiness)	Hardiness training condition was More effective than the other 2 conditions (relaxation/meditation and passive listening) in increasing self-reported hardiness, job satisfaction and social support while decreasing self-reported strain and illness severity. Although participants were assigned to treatment conditions at random, pretreatment scores on the dependent variables of this study showed some variation across conditions. Because of initial variation, the means of pretreatment and post-treatment difference scores within subjects were used throughout in analyses of treatment effects.	Quantitative / Experimental	Mixed – managers at all levels in the company	Utilities company	No theory – literature on mechanisms for hardiness, enhanced performance, stress management, and coping practices

Table 5, Ecological Sentences

Patterns

Patterns that emerged from the thirty-one studies were interpreted by utilizing axial coding and analyzing data from the perspective of the interventions, methods, samples, and theoretical frameworks.

Interventions

Interventions were collapsed and sorted into categories (see table six below), which are purposefully broad concepts, and make up one or more interventions. For example, one of the categories, double loop learning, consists of interventions that are descriptive of double loop learning, and include Large Scale Intervention and a Leadership Development Retreat.

Interventions

Categories	Interventions	Source
Informal Learning	Discontinuous Change	Dissertation: Darnell (2003) Dissertation: Kiehl (2004) Journal: Cope (2003)
	Changing Mental Models	Dissertation: Rodenbaugh (2002)
	Self Directed Motivation System (SDMS)	Dissertation: Pfiefer (2004)
	Mentoring	Dissertation: Stromei (1998)
	Comparison of Informal and Formal learning	Journal: Enos, Kehrhahn, & Bell (2003)
	Open Learning Systems Model	Journal: Warr & Bunce (1995)

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Categories	Interventions	Source
Multi-Source / Multi-Rater (MSMR) Feedback	360 feedback using a set of organizational competencies (pre-established); coaching by external consultants, skill development workshops, an e-learning website and a series of large group events that emphasized development.	Journal: Tyson and Ward (2004)
	Changes in management competence (pre-established) over time, whereby MSMR ratings were assessed at two time points within a two year period.	Journal: Bailey and Fletcher (2002)
	Influence Behavior Questionnaire was used, which outlined 11 influence tactics. Evaluation of the feedback intervention was based on the composite score of the core tactics; Feedback facilitator was also utilized.	Journal: Seifert, Yukl, and McDonald (2003)
	Explored why some individuals pursue development and others do not. The roles of performance and personality were examined as they relate to actions taken for development.	Dissertation: Louis-Slaby (2004)
General Supervisory Skills Training	Employee Relations	Dissertation: Wyszynski (1998)
	Shift scheduling, action planning, Interpersonal skills and purchasing procedures	Journal: Tracey, Tannenbaum and Kavanagh, (1995)
	General supervisory program examined the relationship between four work environment factors; organization support, supervisor support, peer support, and participation in a peer support network, which was set up as a transfer mechanism	Journal: Cromwell & Kolb, (2004)
	Employee assistance; confronting poor performance	Journal: Donohoe, Johnson, and Stevens (1997)

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Categories	Interventions	Source
General Management Development	Management Development System: Perception of the role, significance and impact of management training within an organization.	Journal: Antonacopoul (1999)
	Creativity: Using creative thinking to solve real management problems	Journal: Basadur, Runco and Vega (2000)
	Decision making/expertise	Journal: Summers, Williamson, and Read (2004)
	Certified public management system (local government)	Dissertation: Vicker (1998)
	Managerial Program at a University: Dealing with self; dealing with others; and dealing with the union or non union labor force	Dissertation: Benischek (1996)
	Building Trust	Dissertation: Norman (2003)
Interpersonal	Interpersonal training that emphasized the use of behavior modeling	Dissertation: Bostain (2000)
	Interpersonal; included follow up of adjunct training (transfer mechanism)	Dissertation: Waggoner (2001)
	Giving one to one feedback skills, Decision making, and other routine or procedural topics.	Journal: Hunt & Baruch (2003)
Double Loop Learning	Large Scale Intervention (LSI): focused on effective rapid transformational change through whole system learning	Dissertation: Smilonich (1999)
	Leadership Retreat: examined current practices and organizational supports that encourage deep learning in organizational leaders	Dissertation: Hall (2001)

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Categories	Interventions	Source
Work-based learning	Action learning—via an e-learning program	Dissertation: Waddill, D. (2004)
	An undergraduate business degree for managers based at one of the company's UK plants. The program was implemented in order to create a culture of life long learning.	Journal: Kinman & Kinman (2001)
Resiliency	Hardiness training, which focused on coping mechanisms, a technique called situational reconstruction, emotionally based insights and compensatory self improvement aids on accepting unchangeable situations.	Journal: Maddi, Kahn and Maddi (1998)
Analogical Learning	Negotiation skills training whereby participants were asked to draw comparisons between cases	Journal: Loewenstein, Thompson and Gentner (2003)

Table Six: Interventions

Informal learning. Informal learning was comprised of six different interventions described in eight studies; five dissertations, and three journal articles. Two dissertations focused on informal learning in the context of discontinuous change within the organization (Darnell, 2003; Kiehl, 2004). The first study provided a retrospective case study whereby the author collected data from managers in a successful direct marketing company who had been with the company for at least seven years, and therefore could discuss growth events that occurred within the company (Darnell, 2003). These events were then examined in terms of how they contributed to organizational learning. Through an interview process, participants explained how learning processes before and

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after the events occurred (Darnell). The results suggested that learning processes changed as the company grew in size and age (Darnell).

Major change events included Total Quality Management (TQM), downsizing, being acquired, and integration of an additional catalog company. In terms of learning, using formal organizational processes had increased as did a reliance on explicit knowledge (Darnell, 2003). Conversely, sharing tacit knowledge through informal processes decreased. Further, two levels of learning were found to occur: single and double loop learning (Darnell). Single loop occurred during all events, while double loop occurred with the implementation of TQM and with the company's acquisition (each of which represents both continuous and discontinuous types of learning) (Darnell).

The second dissertation focused on a major change in production processes as well as the introduction of new technology in a manufacturing company (Kiehl, 2004). The qualitative case study (grounded theory), placed an emphasis on how individual learning was diffused and constructed to become organizational in nature. Further, the author stated that the intent was to better understand how organizational can more easily implement successive change programs that are strategically driven (Kiehl). It was felt that understanding this would lead to effective change and process innovation. From the data, the author generated a grounded theory called Locker Room Learning (LRL) that emphasized the social nature of learning (Kiehl). Organizational Learning theory was used as a framework for the study.

There was also one journal article that emphasized discontinuous learning, as a context for informal learning (Cope, 2003). In this study, the researcher explored learning and development from the perspective of entrepreneurs, and in the context of

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small business ownership and growth. The results of the study suggested that critical inward reflection impacted learning outcomes and that in all cases; the entrepreneurs experienced higher level (double loop) learning due to the need to overcome significant problems during the entrepreneurial process (Cope). It was also concluded that emotion and learning are integrally connected with regard to entrepreneurs (Cope).

In the third dissertation, the study utilized informal learning intervention whereby the researcher focused on executive training on changing mental models as they relate to authority relations for the purpose of mobilizing change within an organization (Rodenbaugh, 2002). This intervention utilized experiential training methodology (Tavistock approach), used a mixed method research approach, and the authors concluded that dependent and interdependent individuals are more likely to change their mental models (Rodenbaugh). According to Rodenbaugh, counter-dependent individuals may change, but are likely to return to their original position. The training raised awareness of mental models as they pertained to views on authority of 53% of participants, and two individuals held this stance for six weeks (Rodenbaugh).

The fourth dissertation studied an informal learning intervention whereby a self directed motivation system (SDMS) was compared to instructor-led method of training with regard to performance management in an organization (Pfeifer, 2004). Results indicated that the SDMS enabled transfer of training to occur and an increase in intrinsic motivation towards training content was also achieved (Pfeifer). However, effect sizes were low to moderate.

The fifth and final dissertation to focus on informal learning, was a study that examined the effectiveness of mentoring as a training method for managers; and

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conducted an assessment of transfer and improvement of managerial leadership skills were assessed (Stromei, 1998). The study utilized a mixed methods approach, and results indicated that the mentees showed a significant improvement on their leadership effectiveness and flexibility from the pre-test to the posttest (Stromei). Results of the study were used to design a model for a formal mentoring program.

There were two additional journal articles that examined informal learning interventions. The first provided a comparison between formal and informal managerial learning approached (Enos, Kehrhahn, & Bell, 2003). A mixed methods approach was used and results indicated that informal learning is predominantly a social process and that managers with high levels of proficiency who experience low levels of coworker, supervisor, and organizational support learn skills mostly from informal learning and transfer learning more frequently (Enos, et al.). Interactions with others was the most prevalent learning activity cited by the participants (Enos, et al.).

The second journal article examined the use of an open learning systems model whereby junior level managers worked on their own to learn materials that was presented either in written form, via computer, in audio or videotapes, or interactive video (Warr & Bunce, 1995). The study used a quasi-experimental approach, and the results indicated that learning task anxiety was greater than interpersonal anxiety and trainees reported more use of an analytic rather then behavioral learning strategy (Warr & Bunce). Reactions of enjoyment and usefulness were both higher, and job performance increased primarily between times one and two (Warr & Bunce).

MSMR. Multi-source / Multi-Rater feedback category consisted of MSMR interventions depicted in three journal articles and one dissertation (Tyson and Ward,

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2004; Bailey and Fletcher, 2002; Seifert, Yukl, and McDonald, 2003; and Louis-Slaby, 2004). Tyson and Ward (2004) examined an MSMR feedback intervention (using a set of pre-established competencies) coupled with coaching by external consultants, skill development workshops, an e-learning website and a series of large group events that emphasized personal development. Performance was measured utilizing the MSMR feedback survey. Results were obtained from two group (completed at two different time intervals), senior managers and mid-level, front line managers. While senior managers showed improvement in scores on all competencies, the mid-level line managers did not show significant improvement on any of the competencies. Reasons postulated were that coaching was not used as much with the second group (as compared to the first group). Also, the timing with which the assessments were completed, the mid-level managers were experiencing increased pressure on the job.

Bailey and Fletcher (2002) studied changes in management competence over time, through a longitudinal study whereby MSMR ratings were assessed at two time points within a two year period for a group of middle and senior managers. Overall, competence was perceived as increasing by all raters (self, boss, first and second level subordinates). However, the increase was found to be significant for three out of the four raters—not the bosses. Two primary conclusions were drawn: MSMR feedback will enable managers to become more aware of behaviors rewarded by the organization, and will therefore motivate a focus on the behaviors. Second, the boss' ratings were only slightly higher than the self ratings. Implying that they had served to reinforce the target managers existing self image (ties to the theory that frames the study). It is also postulated that the ratings from subordinates could be due to a priming effect, whereby

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providing feedback ratings at time one had clarified the behaviors managerial staff were expected to engage in. The authors underscore that this is merely conjecture.

In terms of measures, Seifert, Yukl & McDonald (2003) adapted the Influence Behavior Questionnaire which outlined 11 influence tactics. Evaluation of the feedback intervention was based on the composite score of the core tactics. Groups consisted of a treatment group, which received feedback report during a workshop, a control group that received no feedback, and a comparison group that received a feedback report, but no workshop. Managers in the feedback workshop increased their use of some core influence tactics with subordinates, whereas there was no change in behavior for the control group or for the comparison group. Also, having a facilitator increased the perceived utility of the feedback and results in more behavior change for the managers.

The dissertation that focused on MSMR was conducted with the intent to delineate reasons for differences in participant behaviors in development programs (Louis-Slaby, 2004). In other words, the author investigated why some individuals pursue development and others do not. The roles of performance and personality were examined as they relate to actions taken for development (Louis-Slaby). In this study, an effort was made to assess whether participants were active in terms of pursuit of development. Specifically, the author attempted to identify individual differences that may serve as predictors of development pursuit after receiving feedback through MSMR (Louis-Slaby).

While none of the original hypotheses were fully supported, the results were interesting. For example, results that surfaced during post hoc analyses indicated that past development and performance successes had the potential to predict future successes

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(i.e. past behavior will predict future behavior). Thus, strong performers would engage in development in order to become even stronger (Louis-Slaby, 2004). Further, the results indicated that peer and employee ratings were the strongest predictors of pursuit of development activities (Louis-Slaby). This has implications for performance reviews given that peer and employee sources of input are generally not used (only managers).

General supervisory skills training. General supervisory skills training consisted of four studies; one dissertation and three journal articles. The dissertation (Wyszynski, 1998) focused on employee relations skills. The results indicated that there was an improvement in the manager's leadership ability; however, post hoc analysis indicated that when managers get into contract issues, the probability of an employee filing a grievance increases, whether or not the manager's communication skills had improved. Further, the study results point to the need for multiple methods of data collection in order to determine the effectiveness of a training program, and consideration that the relationships being studied are nonlinear and therefore need to be studied in a similar fashion.

The three journal articles consisted of studies by Tracey, Tannenbaum & Kavanagh, (1995); Cromwell & Kolb, (2004); and Donohoe, Johnson, & Stevens (1997). Tracey et al. focused on interpersonal skills, shift scheduling, action planning and purchasing. Multiple training methods were utilized (lecture, role plays, discussion, and audiovisual). Cromwell and Kolb examined the relationship between four work environment factors; organization support, supervisor support, peer support, and participation in a peer support network, which was set up as a transfer mechanism. Assessments were conducted pre and post, as well as one year out. Results suggested

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that trainees who reported receiving higher levels of support in the work environ indicated they were applying, to a higher extent, the knowledge and skills they learned in the training. Use of the peer network was the only factor not significant at the one year time period.

Donohoe, Johnson & Stevens (1997) conducted a study that assessed training on employee assistance in the organization. Methods used were round table discussions, as well as assessments based on video scenarios. Individuals also practiced how to confront poor performance through role plays. Pre, post, and delayed post measures were used based on training content. Results indicated that some information is lost over a period of time, but overall the training was effective. The authors suggest the use of small groups helped with learning acquisition, and that immediate feedback during assessment of video scenarios was also helpful in skill building.

General management development. This category included six studies consisting of three Journal articles and three dissertations. The journal articles examined interventions that included a management development system, creativity and decision making/expertise. The dissertations examined interventions that consisted of a certified public management system, a managerial program at a university, as well as training on building trust.

The first journal article, by Antonacopoul (1999), examined of a management development system across three banks, specifically the perception of the role, significance and impact of management training within an organization. Managers perceived learning to result from four main sources: training, experience, modeling others in the workplace, and coaching. Also, it was discerned that the learning approach was

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consistent across the banks; through incorporating information into relevant job related situations. Further, there was a perception that valid learning was structured training course.

The second journal article (Basadur, Runco & Vega, 2000), studied creativity applied to management development. Participants experienced 20 hours of training in the Simplex creative process. The focus of the training was on using creative thinking to solve real management problems. Methods used were hands on and experiential, emphasizing concepts such as value of ideation and evaluation. One goal of training was to encourage participants to value concrete experience as well as abstract thinking and to practice skills in synchronizing divergent and convergent thinking. Further, emphasis was placed on attitudinal processes in terms of enhancing cognitive processes in creative thinking and problem solving. Training in a complete creativity process increases a manager's ideation and evaluation skills. The training increases the acceptance of avoiding premature evaluation (convergence) of new solution ideas. The authors suggest that this probably increases the acceptance of active divergence--the free wheeling generation of ideas without judging their quality.

The third and final journal article by Summers, Williamson, & Read (2004) studied decision making as it related to the notion of expertise. Specifically the authors compared decisions made by four groups, one made up of seasoned credit managers, another with university lecturers (finance and accounting) and their students. Also, there was a control group of lay people. Managers, who did not have formal education, but many years of experience, did not outperform students, who had no experience. Further, lecturers who had no experience in credit management, who did know the theories and

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concepts, performed better than professional managers. The authors suggest this may indicate that formal education leads to expertise more readily than experience.

Dissertations included studies on a certified public management training course Vicker (1998), a managerial development program at a university (Benischek, 1996), and a study on the notion of organizational trust (Norman, 2003). Vicker investigated the relationship between interpersonal communication competence with an experiential learning approach. The study did not find evidence to suggest that improvement was made between the pre and post tests, and that the experiential methodology had no impact on learning either. Benischek studied techniques used to increase management effectiveness utilizing a 15 week management development program, which was part of a semester long professional diploma program at a local university. Content was focused on 1) Dealing with Self: Time mgmt, delegation, understanding oneself, stress management, supervisory fundamentals, effective presentation and platform skills; 2) dealing with others, group decision making and dynamics, principles of motivation, leadership and management styles, communication, performance appraisal, conflict management, decision making: supervisory planning and control; 3) dealing with the union or non union labor force. Three relationships were confirmed: training programs attract employees that are prone to more of an internal locus of control; second, managers are more internal than non managers; and third job satisfaction and age were positively related.

Finally, the Dissertation by Norman (2003) examined what actions managers can take to improve employee trust and emotional well-being. Trust toward managers was

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associated with positive affect, pleasure at work, and job satisfaction, and feelings of less tiredness and anger (Norman).

Interpersonal training. Three studies utilized interpersonal training as an intervention; two were dissertations and there was also one journal article. The first dissertation, by Bostain (2000), examined interpersonal skills training that emphasized the use of behavior modeling for supervisors in a global aerospace company. Mean scores between self evaluation, subordinate evaluation and supervisor evaluation were positively correlated. There was a statistically significant difference between the control group and the experimental group concerning demonstration of the key actions in the workplace. The results indicate the use of behavioral modeling method to improve supervisory interpersonal skills

The second dissertation, by Waggoner (2001), explored interpersonal skills training for supervisors and entry level technical managers at the NASA Research center. The training group received training as well as follow up of adjunct training. While the adjunct training was perceived as easing their transition into a management positions, there was no significant change indicated between pre and post tests.

Finally, the journal article focused on interpersonal training was utilized for executives in a university-based managerial program in London (Hunt & Baruch, 2003). The training had modest but positive outcomes, however the interesting result in this study was that the skills learned through the formalized training were seen to be easily described, had clear objectives and outcome criteria and could be segmented into a step by step routine based on memorable model. On the other hand, the soft skills proved to be more difficult to learn. Two skills in particular appeared to be less responsive—

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decision making (influenced by cognitive skills) and giving one to one feedback skills. In other words, training may have little impact on ways of thinking.

Double loop learning. Double loop learning was depicted in two interventions, which was captured within two dissertations. First, Smilonich (1999) utilized a Large Scale Intervention (LSI) with the underlying purpose of building an understanding of how to effective rapid transformational change through whole system learning. The researcher utilized action research as the methodology. The study focused on senior, middle, and eventually all members of the state government department of transportation. The research examined learning and its relationship to the behavior within the organization as a system. Double loop learning was a fundamental objective. The author contended that the behavior changes could be attributed to organization. learning that occurred during the events executed as part of the intervention. However, because the learning was heavily context-laden and counter-cultural it was not readily transferable to different contexts and therefore not sustainable.

The second dissertation explored the notion of deep learning; specifically, the author conducted an exploration of current practices and organizational supports that encourage deep learning in leaders (Hall, 2001). The case study resulted in the contention that deep learning occurs as a result of an unpredictable and dynamic interplay among persons and environment. The retreat offered an opportunity to practice critical reflection, which was seen as important to learning deeply. Insights did not necessarily occur as a result of the 2.5 day retreat; rather, the author argues that insight may get sparked and over time take hold. The author contends that this case should not

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intentionally be related with a specific outcomes. It's the process that is more important for long term adaptability.

Work-based learning. This category consisted of two studies. The first study was a dissertation that used an action learning approach via an e-learning program (Waddill, 2004), and the second study was a journal article (Kinman & Kinman, 2001) that brought a undergraduate University program to the organization.

Wadill's (2004) dissertation focused on an e-learning program that was conducted with senior managers in a 5 week accelerate course. Findings were that the action learning approach provides appropriate data to evaluate the course using Kirkpatrick's first three levels (reaction, learning, behavior). Behavior change was evident given that 80% of the learners took action on the issue they brought to the class (Wadill). The two that did not initially take action, did so several months later.

In an open-group program whereby some of the problems presented were self-development issues, the results for the organization (Level Four) are more problematic to evaluate. The author suggests learning took place in that participants successfully employed the reflective inquiry approach, which none of them had ever used before (Wadill). In order to do so, they had to learn the question, reflection, and re-framing approach.

The journal article by Kinman & Kinman (2001) studied sixteen male managers, most of whom had no formal education, and almost all have risen through the ranks within the organization, often from engineering and technical backgrounds. Results from learning styles inventory indicate the individuals were primarily driven by extrinsic rewards, and by the need to enhance self esteem through competition (Kinman &

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Kinman). A local university partnered with the organization and designed an undergraduate business degree for employees; which was based at one of the company's UK plants. The program was implemented in order to create a culture of life long learning. While participants completed the program successfully, they experienced challenges with some parts of the academic work (Kinman & Kinman). Results suggest that they did not achieve learner independence, and while they excelled in tasks that involved well-practiced skills (such as the writing of concise business reports), more complex tasks, such as those requiring synthesis of ideas and critical reflection were difficult and not achieved (kinman & Kinman).

Resiliency. Resiliency was defined as "hardiness" in a journal article by Maddi, Kahn & Maddi (1998). The results indicated that hardiness training condition was more effective than the other 2 conditions (relaxation/meditation and passive listening) in increasing self-reported hardiness, job satisfaction and social support while decreasing self-reported strain and illness severity (Maddi, et al). Coping mechanisms were utilized and were referred to as transformational coping (Maddi, et al.). Techniques included situational reconstruction, which assists in creating a broader perspective on the stressor and produces emotionally based insights, and compensatory self improvement aids were applied which encouraged the acceptance of unchangeable situations without falling into self pity (Maddi, et al.).

Analogical learning. This concept was investigated by Loewenstein, Thompson & Gentner (2003) in a journal article. A negotiation skills training course was used as the intervention. The participants consisted of a mixed group of sales managers and MBA students. Groups that compared cases which applied negotiation techniques that utilized

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a contingent contract scheme (analogy training) were more likely to form a contingent contract in the actual, face to face negotiation, than were those who analyzed the cases separately (Loewenstein et al.). The participants that were asked to draw comparisons between case studies were able to learn the contingent contract schema from examples and apply it to a novel face to face negotiation situation (Loewenstein et al.). In other words, drawing comparisons between the cases facilitated understanding the general principle underlying the examples. Also, the authors examined, but found no reliable difference, in generating contingent contracts between negotiations among intact teams and negotiations among solo individuals (Loewenstein et al.).

In this section of the meta-synthesis, interventions were sorted into categories that were broad in nature and made up one or more interventions. Categories included Informal Learning, Multi-Source / Multi-Rater (MSMR), General Supervisory Skills Training, General Management Development, Interpersonal, Double Loop Learning, Work-based learning, Resiliency, and Analogical Learning (see table six). Informal learning was represented by the majority of studies (eight) and these were used across samples (supervisor, mid-level manager, senior/executive and mixed groups).

Methods

Meta-method is concerned with the "epistemological soundness of the existing research, as well as the ways the methodological applications may have influenced the findings that are generated" (Paterson, Thorne, Canam, & Jillings, 2001, p. 71). This section will provide a review of primary methods utilized in the individual studies that are part of this meta-synthesis. Specifically, the review consisted of two primary objectives: 1) to outline which research methods were used for which type of

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interventions, and 2) I employed the Design and Implementation Assessment Device (DIAD) version 0.3 (Banner & Cobb, 2001) in order to elucidate any limitations in how the method utilized possibly shaped results of the study (Paterson, et al.). Within the primary research studies included for this meta-synthesis, there were six types of research methods represented, a) Quantitative experimental research (true experimental), b) Quantitative quasi-experimental research, c) Quantitative non-experimental designs (correlational), d) Qualitative research (Case Study), e) Mixed-methods design, and f) Action/Practitioner Research. The majority of studies in this review, eleven, utilized a Quantitative, Quasi-Experimental research design (see Table Seven).

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Methods

Research Method		Interventions	Source
Quantitative experimental	self assessment (immediately after training and one week after); multiple choice exam; coworker feedback	Interpersonal communication competence, using an experiential learning approach	Dissertation: Vicker (1998)
	Participants were randomly assigned to one of two training groups. Each group received identical interpersonal skills training in the first phase of the study. Following this phase, one of the groups participated in an adjunct training curriculum developed to complement the first phase of the training. This program focused on transfer of these skills to the job. As compared to a control group that did not receive any training.	Interpersonal skills with adjunct training (transfer mechanism)	Dissertation: Waggoner (2001)
	A two-group, pretest-posttest randomized block design was used; intrinsic motivation was used as the blocking variable.	Training on Management soft skills examined effects of instructor-led and a self-directed management system (SDMS).	Dissertation: Pfeifer (2004)
	causal-comparative. Two groups were randomly designated to a treatment group, or a control group; Levenson's 24 item locus of control scale was administered; pre and post tests were administered (post = 1 month after).	University-based Management development diploma program was examined for effectiveness on perceived locus of control and job satisfaction in managers and non-managers	Dissertation: Benischek (1996)
	Randomly assigned to groups. A composite questionnaire was used at pretest and posttest. Further, The Personal Views survey was used to measure hardiness.	Hardiness training; Effectiveness was compared with a relaxation / meditation condition and a placebo / social support control (passive listening).	Journal: Maddi, Kahn, and Maddi (1998)
	Treatment condition received a feedback report in a workshop with a facilitator. Comparison group received	MSMR feedback and the use of a feedback facilitator on the influence behavior (proactive	Journal: Seifert,

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Research Method		Interventions	Source
	the same type of feedback report, but no workshop. Control group received no feedback or workshop. Pre and post measures were used (post = 3 months after)	influence tactics with subordinates, peers, and bosses) of managers.	Yukl, and McDonald (2003)
Quantitative quasi-experimental	Impact on individual = A one-group pretest-posttest design where subjects served as their own control. Individuals were surveyed before the training and again 3 months after the training. The pretest posttest design provided a comparison between skills and abilities by the same group of participants before and after the training. The impact on the organization was determined by a one-group posttest design. Subordinates rating of manager performance as a result of the training program served as a measure of organization performance. In addition, secondary data provided measures for organizational performance, which included filed grievances.	Employee relations training and it's impact on manager and organizational performance.	Dissertation: Wyszynski (1998)
	The study utilized a posttest only design in order to focus on the evaluation of actions based on behavioral modeling transfer to actual on the job performance. This design was used in order to control for participant sensitization. A matched control group was used for comparison of treatment and control responses to the survey. A survey assessed behavioral demonstration of actions taken on the job. It was completed by the participant, one subordinate and the participant's immediate supervisor seven months after the training was completed. The control group was the same, except they did not receive the training.	Effects of Behavior modeling training with regard to training transfer.	Dissertation: Bostain (2000)

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	Research Method	Interventions	Source
	Conducted over seven months; examined 11 trainee characteristics in relation to learning scores, reaction to the program, and changes to behavior on the job. Analytical and behavioral learning strategies were examined in terms of the use of critical reflection and other cognitive processes. Questionnaires were administered for time one and two to participants. The time one questionnaire was designed to elicit self report responses regarding pre-training motivation, anxiety, and learning self-efficacy. Scores on learning measures were provided by tutors, whereby they assessed achievement on each training module on a performance scale of 1 to 5 (requiring improvement to excellent). Learning was assessed on two of the three training components; cognitive and skill-based (but not affective). Participants direct supervisor submitted performance ratings at time one, two and again at time three (three months later).	Open Learning Intervention	Journal: Warr & Bunce (1995)
	Assessment of interpersonal competencies was completed on a longitudinal, pre and posttest basis. Assessments were obtained from the participants direct reports. The first assessment was completed six weeks prior to the training, and the second assessment was completed six months after the training. A minimum of five direct reports used a questionnaire to record their satisfaction level with their managers' interpersonal skills.	Interpersonal skills training	Journal: Hunt and Baruch (2003)

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Research Method		Interventions	Source
	Creative thinking skills, attitudes and behaviors were assessed in a field experiment. Interrelationships among variables, and learning during training were measured and a best-fit causal model was designed. Participants were measured on the variables before and after. A procedural check was done to ensure that before and after training effects were similar to previous training research results in several controlled field experiments, which negated the necessity for a control group.	Creative thinking training	Journal: Basadur, Runco, & Vega (2000)
	Evaluation levels were adapted from two primary sources, including Kirkpatrick's four levels of evaluation. Learning and performance were collapsed into one level, which was called, content. Level one was named, process, and level four (now three) was named, outcomes. The management development program used to examine the evaluation tool took one year to complete and a total of three and a half years was covered in terms of the evaluation period.	MSMR feedback as an evaluation tool for management development	Journal: Tyson & Ward (2004)
	Examined expert judgment in credit managers with regard to the method of acquiring it, specifically through formal education or through experience. Credit management decisions were assessed for four groups of participants who varied in their degree of experience in credit management and in their education in finance and accounting. Seasoned credit managers who did not have a formal education, finance and accounting lecturers from a local university, and their students. The control group was	Decision making and Expertise.	Journal: Summers, Williamson, & Read (2004)

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	Research Method	Interventions	Source
	made up of laypeople with no financial background at all. Decisions made fell into the first two functional responsibilities of credit managers: assessing credit risk and granting credit.		
	Analogical method consisted of the treatment group comparing two case studies with regard to the negotiation techniques used. The comparison treatment group was asked to read the individual cases (not to make comparisons). The control group had no training (i.e., case studies). The researchers also compared the performance of individuals who negotiated on their own, and the negotiating teams.	Analogical learning methods in teaching negotiating techniques	Journal: Loewenstein, Thompson & Gentner (2003)
	The study utilized a repeated measures design that included a pre, post and delayed post assessment six months after the training.	Employee assistance supervisory training program	Journal: Donohoe, Johnson & Stevens (1997)
	Examined the importance of work environment on the application of trained skills on the job. Three weeks prior to training a measure of supervisory behaviors was obtained from the participant and their supervisor. At the end of training, learning was assessed and participants completed a transfer of training climate and continuous-learning culture questionnaire. Participants were also asked to distribute the questionnaire to their supervisor and four or five coworkers. 6-8 weeks after training, participants and their supervisors completed a post training behavior questionnaire, which focused on the same behaviors as the pre training questionnaire.	Supervisory training and work environment (transfer climate and continuous learning culture)	Journal: Tracey, Tannenbaum, & Kavanagh (1995)

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Research Method		Interventions	Source
	MSMR feedback was examined in relation to manager's performance. This longitudinal study investigated measures by self, boss, as well first and second level subordinates with regard to management competencies. The assessment was administered in the context of a development program that had already been established in the organization. Ratings were compared over two administrations, with a period of two years between the first and second administration.	MSMR feedback and manager's performance	Journal: Bailey and Fletcher (2002)
Quantitative non-experimental designs	Examined MSMR as part of development program through personality and performance indicators. In addition to data collected from participants, secondary data was also used (personality assessments and MSMR feedback) which were obtained prior to the study. Factor analysis was conducted using maximum likelihood method. Approximately 63% of variance was explained as "activity in a development program." Further, two secondary factors emerged—feedback acceptance and organized approach to development. Eleven instructors at the University provided feedback on participants that they taught in the program via a rating form.	MSMR used as part of a yearlong executive development program at a University	Dissertation: Louis-Slaby, (2004)

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Research Method		Interventions	Source
	Participants were randomly assigned to a treatment or control condition. Repeated measures ANOVAs were used to assess change in manager behavior and employee attitudes and emotions between a baseline measure and a follow up. The determinants were work related attitudes and emotional well-being. A series of regression analyses were run to further examine the relationship between manager behavior and employee trust. Two factors emerged; ongoing behavior (listening and giving feedback, applying company values, applying consistent values, etc.), and scheduled behavior (quarterly and annual recognition, creating a development plan with employees, setting objectives, and delegating meaningful assignments).	Trust Building; training for managers to gain employee trust	Dissertation: Norman (2003)
Qualitative research	Exploratory case study. After the course, each participant was interviewed. All interviews occurred within one week of the course and were conducted by phone. All were transcribed and resubmitted to interviewees for confirmation, correction and additional comments. The transcripts were then coded.	A work-based learning intervention; virtual asynchronous online management course on the topic of action learning	Dissertation: Waddill (2004)
	Retrospective Case Study. Individual semi-structured interviews were conducted and themes and patterns were induced into a composite illustration of organizational growth events and learning processes over a fifteen year period	A retrospective design in order to investigate discontinuous events (informal learning), more specifically organizational growth events that had significantly contributed to organizational learning within the company as it grew in age and size.	Dissertation: Darnell (2003)

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	Research Method	Interventions	Source
	Case study to ethnographically describe practices and organizational supports that fostered deep (double loop) learning in its leaders. The research design consisted of opinion-polling of subject matter experts, semi-structured interviews and participant observation in ethnographically describing the practices and organizational supports used to foster deep learning. A vivid description is provided of a company operating under a silo-centric, command and control hierarchical leadership, and a focus on customer service. Further, the researcher describes the setting in which a leadership retreat (the focal point of the intervention) takes place.	Double Loop Learning; exploration of organizational practices and supports that foster deep learning.	Dissertation: Hall (2001)
	A grounded theory approach was used to explore a case through the use of a preplanned, structured interview guide. The researcher used a combination of life story, critical incident, and focus group interview techniques, which all together provided for an emergent process. In addition to interviews, observations were made, and secondary data was collected. The theory generated from this study was called, locker room learning (LRL), which included both individual and organizational level learning and was essentially double loop learning in the specific case of organizational process change.		Dissertation: Kiehl (2004)

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	Research Method	Interventions	Source
	Semi-structured interviews were conducted with participants and lecturing staff. Literature was reviewed on motivation and learning styles of mature students, and was used as a basis for examination and coding of data from open-ended questionnaires and semi-structured interviews.	Explored the role of motivation to learn.	Journal: Kinman and Kinman, (2001)
	A longitudinal study, spanning three years. Semi-structured interviews, observation, questionnaires, and critical incident technique were utilized. Interviews covered perceptions of the current management development training system, main influences on management training in the organization, perceived role of training to individual development, and perceived association between learning and training and the level of utilization of learning from training (transfer).	Management Development System	Journal: Antonacopoulou (1999)
	Development was explored through the lens of discontinuous learning events. Further, the concept of critical reflection was explored, as were the distinctive forms of higher level (double loop) learning from facing, overcoming and reflecting on significant problems or opportunities during the career of the entrepreneur. In-depth, unstructured phenomenological interviews were conducted with the six participants, which delved into the history of their business. Critical incidents were an integral part of the interview.	Explored the development experience of six entrepreneurs within the context of small business ownership and growth.	Journal: Cope, (2003)

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Research Method		Interventions	Source
Mixed-methods design	In a prior study conducted one year prior to this study, the twenty competencies were identified. All data were collected using a single self report questionnaire.	Examined the extent to which managers engaged in informal learning, perceptions of support in the environment, and the level of managerial proficiency related to transfer of learning in twenty core managerial skills	Journal: Enos, Kehrhahn & Bell (2003)
	Trainees completed a self-report five part questionnaire and short answer questions. Questions were focused on transfer of skills from supervisory training and the degree of organizational, supervisor, and peer support. Also, the trainees direct managers completed a three part questionnaire and short answer questions, with regard to the trainee; specifically, the trainees ability to transfer training and their own perception of organizational and supervisor support.	Examination of work-environment support factors affecting transfer of supervisory skills training.	Journal: Cromwell and Kolb (2004)
	The study utilized a Q-methodology, a questionnaire, which were augmented with personal interviews. Factor analysis of the Q-sorting was done; factors emerged relative to three mental models of authority—dependency, counter-dependency, and interdependency. Before the workshop, immediately after, and 6 weeks after, factors were compared to answers to a threefold question: what are the participants points of view about authority relations, do they change after a workshop, and is the role of locus of control involved? A self report measure of satisfaction was used 6 weeks after the training to assess outcomes.	An experiential education program (informal learning) in Tavistock style with executives explored mental models in terms of power and authority.	Dissertation: Rodenbaugh (2002)

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Research Method		Interventions	Source
	Evaluated the effectiveness of a mentoring program (also categorized as informal learning), whereby written instruments were used on both the mentors and mentees. Instruments included the Leader Behavior Analysis II (LBAII) (pre and post test measures) the Myers-Briggs Type indicator was administered (pretest), and a mentoring functions scale consisting of 30 questions was given to the mentees to assess their overall satisfaction (posttest). In addition, open ended interviews were conducted with a random sample of pairs.	Mentoring program	Dissertation: Stromei (1998)
Action/Practitioner Research	Action research was applied to the intervention. It was a longitudinal study to show whether the LSI had a substantive and lasting impact (it did not). The underlying purpose of the study was to positively impact the commitment level of employees around a transformational change through whole system learning. The author also wanted to better understand organizational learning in the context of researcher's organizational system.	Large Scale Intervention (LSI) at a state government's transportation department.	Dissertation: Smilonich (1999)

Table seven, Methods

Quantitative, experimental design. True experimental and quasi-experimental research designs employ a treatment and control group in an attempt to determine whether the treatment program (i.e., didactic classroom based training on performance management) had an effect on the outcome variable (Agresti and Finlay, 1997). In other words, they investigate cause and effect relationships (McMillan and Wergin, 2002). The primary difference between the two designs is that true experimental designs will use random assignment of participants to different treatments; whereas, quasi-experimental designs do not randomly assign participants (McMillan and Wergin). Typically, a quasi experiment will have a pretest and a posttest (outcomes of the post-test are the dependent variable) (McMillan and Wergin).

There were four dissertations that utilized a quantitative, experimental design and two journal articles. The first dissertation examined interpersonal communication competence and learning in management development training, using an experiential learning approach (Vicker, 1998). The management development program was part of a Florida's state and local government training center. Participants were randomly assigned to a treatment or control group. The researcher used a self report assessment with regard to participant's interpersonal communication competence. Each group participated in the same experiential activities. After the course, participants completed the self assessment and a multiple choice exam, which was focused on the learning objectives of the training. Participants were also given a revised copy of the self report and were asked to complete the report in one week and return it to the researcher. Further, volunteers were asked to participate after the training, whereby they would solicit feedback from coworkers with regard to their interpersonal communication competence.

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The first hypothesis resulted in the null being accepted. Those that scored high on the competence instrument were not more satisfied with the learning experience. Hypothesis number two resulted in the null being accepted. Pearson test of correlation showed no significant linear relationship between competence with the scores on the post test exam. Hypothesis three did not show a statistically significant difference. There was no evidence to suggest improvement had been made between pre and post tests.

The second dissertation examined the effectiveness of traditional and adjunct management training focused on interpersonal skills for junior technical managers at a national aerospace research laboratory (Waggoner, 2001). Participants were randomly assigned to one of two training conditions. There was also a control group. Each training group received identical training in the first phase of the study. Following this phase, one of the groups participated in an adjunct training developed as a follow up to the first phase of the training. This program focused on increasing the awareness of the role of interpersonal skills in management, the development of these skills and transfer of these skills to the job; the control group that did not receive any training.

Each of the two training group's scores indicated significant increases resulting from the training. The training group that received the adjunct training resulted in the training easing their transition into a management position and improved their ability to transfer the management skills to their new job to a significantly greater degree than the group that received only the initial phase of training.

The third dissertation examined the effectiveness of two training methodologies in the development of management soft skills (Pfeifer, 2004). One methodology was instructor-led, and the second was a self-directed management system (SDMS). The

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research utilized a two-group, pretest-posttest randomized block design to compare the effectiveness of two training delivery methods: traditional instructor led workshop training and self directed motivation system (SDMS); with intrinsic motivation as the blocking variable. Participants were randomly assigned to one of two training methods, whereby they were taught skills to increase employee effectiveness through performance management techniques. Pre and post tests were administered on knowledge and skill acquisition, and levels of intrinsic motivation towards training content. Additionally, two months following the treatment, skill transfer interviews with individual managers were conducted and resulted in three transfer ratings. A fourth instrument was used to assess the degree of skill transfer for each of the three skills taught in the training.

No statistically significant mean differences were found between groups in the knowledge or skill posttest, and in the transfer of skills 1 or 2. For skill 3, a statistically significant different was found in favor of the SDMS group. Further, the study found a statistically significant increase in the level of post motivation scores in the SDMS group. The effect size was low (.39). Overall, SDMS, was as effective as instructor-led workshop delivery. In the areas of transfer of training and increasing managers' intrinsic motivation towards training content, SDMS was more effective than the instructor-led workshop.

The fourth dissertation examined the effectiveness of a management program on perceived locus of control and job satisfaction in managers and non-managers (Benischek, 1996). The intervention was a 15 week management development program, which was part of a semester long professional diploma program at a University. The program was designed for the new manager or supervisor and focused on three

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components, Self, Group dynamics, and dealing with Unions. The research utilized a causal-comparative approach whereby two groups were randomly designated to a treatment group (43 participants), which received the basic training program, or a control group (47 participants). Levenson's 24 item locus of control scale was administered. Using this Liker scale, three dimensions of locus of control (internal, powerful others, and chance) are emphasized.

Then, the treatment group participated in the training, and was measured again with a posttest one month after the end of the program. Control group received only the pre and post tests at comparable time intervals. In addition, portions of the standard version of the Job Diagnostic Survey were used to measure job satisfaction of the participants. This was also administered pre and post to both groups. Pre and post scores were analyzed using Pearson product-moment correlations, homogeneity of regression coefficients, and a mixed design.

No relationship between any of the three independent variables (group, status, and time) and the four instrument scores (three Levenson and one JDS) was established ($p = .01$ level) using four ANOVAs. For the first hypothesis, all four correlations were significant at the $p < .01$ level (null rejected). Hypothesis two, the null was also rejected—there was strong relationship between four of the six posttest scores for locus of control and job satisfaction. Hypothesis three resulted in the null being rejected. Regression analysis indicated there was interaction between the pretest score and two independent variables (participation and position status) were significant at $p = .03$ level. Hypothesis four resulted in the null being accepted. Post hoc analysis indicated job satisfaction increases with age. Further conclusions were that the training program

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appeared to attract a certain type of employee--one that was more internal in terms of locus of control, and managers are more internal and satisfied than non managers.

There were two journal articles that utilized a quantitative, experimental design. The first journal article examined the effectiveness of hardiness training for managers (Maddi, Kahn, & Maddi, 1998). Hardiness training was compared with a relaxation/meditation condition and a placebo/social support control (passive listening). A composite questionnaire was used at pretest and posttest. It included measures of personality hardiness, job satisfaction, subjectively experienced strain, perceived social support and illness. Further, The Personal Views survey was used to measure hardiness. This test consisted of 45 rating scale items worded to refer to beliefs about one self that concerned sense of commitment, control, or challenge. On each scale, some items are positive and others are negative indicators. These 45 items were factor analyses, which yielded three inter-correlated factors identifiable as commitment, control and challenge.

For subjectively experienced strain, the Hopkins Symptom Checklist was used. Consisting of 58 items, this test has adequate reliability and is in common use to indicate levels of anxiety, depression, somatization, and interpersonal sensitivity. Perceived social support was measured as the total of four scales. Two scales concerned the work site, and the other two concerned the home. Adequate reliability and validity have been demonstrated for these scales. Pre-training and post-training reporting period used was the length of the course--2.5 months.

The hardiness training proved to be more effective than the other two conditions in increasing self-reported hardiness, job satisfaction and social support while decreasing self-reported strain and illness. Although participants were assigned to treatment

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conditions at random, pretreatment scores on the dependent variables of this study showed some variation across conditions. Because of initial variation, the means of pretreatment and post-treatment difference scores within subjects were used throughout in analyses of treatment effects. Effect sizes were moderate to large across measures.

The second journal article examined the effects of multi-Source / Multi-Rater (MSMR) feedback and the use of a feedback facilitator on the influence behavior of managers toward subordinates (Seifert, Yukl, & McDonald, 2003). This field experiment included a treatment and control group. There was also a quasi-experimental comparison group in another organization. Managers in the treatment condition received a feedback report in a workshop with a facilitator. Mangers in the comparison group received the same type of feedback report, but no workshop. Managers in the control group received no feedback or workshop. A pre-measure survey was conducted in all three conditions to assess each focal manger's behavior toward subordinates, peers, and bosses.

The same respondents were surveyed again in a post-measure survey conducted 3 months later. The feedback involved a manager's use of proactive influence tactics with subordinates, peers, and bosses. There were four core tactics: Rational persuasion (presenting facts, evidence, and logical argument); inspirational appeals (appealing to the person's values, ideals, and emotions); consultation (involving the person in planning how to accomplish a task or objective), and collaboration (offering to make it easier to carry out a request).

A two-way repeated measures analysis of variance (ANOVA) was used to assess the effects of the feedback workshop. Managers in the feedback workshop increased their use of some core influence tactics with subordinates, whereas there was no change

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in behavior for the control group or for the comparison group. Mangers in the treatment condition significantly increased their use of the four tactics with subordinates. There was no significant change for managers in the control group. Two of the core tactics demonstrated a significant change were consultation $f(1, 27) = 9.13$, $p < .01$, collaboration, $f(1,37) = 5.08$, $p<.05$. Further, feedback was perceived to be more useful by managers who received it in a workshop with a facilitator than by managers who received only a printed feedback report. Effect sizes ranged from moderate to large for all analyses.

With regard to study limitations as elucidated through the DIAD, the two journal articles were both limited in terms of external validity—sampling, in that they both compared minimal sample data; gender and managerial level and gender respectively (DIAD # 5). Also, in neither case did the studies adhere to external validity with regarding to testing within subgroups (DIAD #6). External validity with regard to testing within subgroups was also missing from four of the six dissertations. Finally, in two instances, the use of secondary data or other potential extraneous variables could have limited internal validity in terms of contamination (DIAD #4). Finally, with regard to the use of experimental designs, it has been suggested that training programs found within the management development domain are typically multi-modal; therefore, even when a positive effect is realized, the researcher cannot identify any true causation (Agresti and Finlay (1997).

There were 11 quasi-experimental studies in this meta-synthesis. Two were dissertations and nine were journal articles. The first dissertation examined management development and it relationship to organizational performance (Wyszynski, 1998). The

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research involved an evaluation of a training and development program focused on employee relations. The impact that the training had on the individual was measured through the use of a one-group pretest-posttest design where subjects served as their own control. Individuals were surveyed before the training and again 3 months after the training. The pretest posttest design provided a comparison between skills and abilities by the same group of participants before and after the training.

The impact that the training had on the organization was determined by a one-group posttest design. The subordinates rating of manager performance as a result of the training program was obtained with this measure and it served as a measure of organization performance. In addition, secondary data provided measures for organizational performance, which included filed grievances dating back to 1995. Logistic Regression analysis; Pearson Correlations were used in analysis.

The first hypothesis was supported with self reports from managers that indicated improvement in their own performance from the pre and posttest scores. Specifically, improvement was indicated regarding their ability to communicate, problem solve, and manage schedules and deadlines. The second hypothesis predicted that an improvement in management skills based on self reports would be positively related with subordinates rating of improvement in management skills. This was not supported. The third hypothesis improvement in management relations based on the subordinate's evaluation of manager performance would increase the probability of reducing the frequency of grievance filing rates. This was strongly supported.

The second dissertation was an evaluation of management development behavior modeling training with regard to training transfer (Bostain, 2000). The study was

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conducted in a field setting and utilized a posttest only design in order to focus on the evaluation of actions based on behavioral modeling transfer to actual on the job performance. This design was used in order to control for participant sensitization. A matched control group was used for comparison of treatment and control responses to the survey. The survey assessed behavioral demonstration of actions taken on the job. It was completed by the participant, one subordinate and the participant's immediate supervisor seven months after the training was completed. The control group was the same, except they did not receive the training. Analysis consisted of Pearson project-moment correlation between participants, followed by a 2X3 analysis of variance (ANOVA) for main effects, followed by t-Tests.

ANOVA using the transfer of training as the dependent measure showed a highly significant main effect for treatment condition. A statistically significant difference was found between the control group and the experimental group with regard to demonstration of the actions on the job, as reported by the trainees, their supervisors, and their subordinates. No interaction effect for position was found. The control group did not demonstrate any change in behavior.

The first journal article using a quasi-experimental design examined trainee characteristics and the outcomes of an open learning intervention (Warr & Bunce, 1995). The study was conducted over a period of seven months and examined 11 trainee characteristics in relation to learning scores, reaction to the program, and changes to behavior on the job. Specifically, analytical and behavioral learning strategies were examined in terms of the use of critical reflection and other cognitive processes. Questionnaires were administered for time one and two to participants. The time one

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questionnaire was designed to elicit self report responses regarding pre-training motivation, anxiety, and learning self-efficacy. Two scales were used to determine distal and proximal forms of pre-training motivation. Anxiety was measured by two scales which were derived as separate factors from principle components analysis with varimax rotation. Half were negatively-worded and reverse-scored. There were 36 items in the Time two questionnaire designed to discern learning activities, and they were framed as either analytic (alpha = .84) which utilized ten items, or behavioral strategies (alpha = .84) which utilized twelve items.

Scores on learning measures were provided by tutors, whereby they assessed achievement on each training module on a performance scale of 1 to 5 (requiring improvement to excellent). Learning was assessed on two of the three training components; cognitive and skill-based (but not affective). Participants direct supervisor submitted performance ratings at time one, two and again at time three (three months later). Performance elements were defined by the company as key behaviors. Internal reliabilities ranged from .93 to .95. Reactions to training were also measured and had reliability measures of .84 to .93.

Hierarchical multiple regression analyses was used to test hypotheses and t-Tests were used to measure all variables at Time one. Significant associations were found between learning score and changes in rated job performance. Mean job performance increased between time one and two. Multivariate analysis of variance on the three separate measures (Time one, two and three) indicated an overall trend was strongly significant .79, $p = .008$. Only one difference that was significant was found between Time two and three. This was an increase in wider job knowledge. Further, only

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analytical strategy was found to be significantly correlated with learning (versus behavioral).

The second journal article examined the impact of interpersonal skills training with executives (Hunt and Baruch, 2003). Assessment of interpersonal competencies was completed on a longitudinal, pre and posttest basis. Assessments were obtained from the participants direct reports. The first assessment was completed six weeks prior to the training, and the second assessment was completed six months after the training. A minimum of five direct reports used a questionnaire to record their satisfaction level with their managers' interpersonal skills.

Results indicate statistically significant difference for some of the competencies. Overall training had positive but modest outcomes. In no case did participants fail to improve the mean of at least some competencies. Skills that were associated with a change were those that were easily described, had clear outcome criteria and were segmented into a step-by-step routine during practice. In contrast, the "soft" skills such as being sensitive to pressures of others proved to be difficult in terms of seeing evidence statistically. The two skills that seemed to be the least responsive to the training based on results were decision making and giving one on one feedback.

The third journal article examined how creative thinking skills, attitudes and behaviors work together in a field experiment (Basadur, Runco, & Vega, 2000). Inter-relationships among variables, six attitudinal and behavioral skills learning during training, was measured and a best-fit causal model was designed. Before and after training participants were measured on the variables. With regard to analysis, two procedural checks were made: first, to ensure that responses to the two task sets (AC and

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BD) were not significantly different. Second, a procedural check was done to ensure that before and after training effects were similar to previous training research results in several controlled field experiments, which negated the necessity for a control group.

The training achieved positive results on all but evaluation of non original ideas. Two of the hypotheses relationships were not supported and the direction of two others were reversed. Quantity of ideas produced increased significantly from a mean of 9.1 to a mean of 13.4 ideas ($p < .001$). Also, a significant increase in the quality of ideas produced from a mean of 3.1 to a mean of 5.4 original ideas ($p \leq .001$). After training, participants recognized significantly more accurately which of their ideas were original. Further, the production of original ideas improved. Greater ideational skill in generating high quality, more original solution ideas appears to be directly associated with greater evaluation skill in recognizing original, high quality ideas. Thus the key appears to be ideational skill in generating a quantity of ideas. This skill is directly and strongly related to ideational skill in quality of ideas generated (.80) and to evaluation skill in recognizing lower quality ideas (.56).

The fourth journal article examined the use of multi-source / multi-rater (MSMR) feedback as an evaluation tool for management development (Tyson & Ward, 2004). The evaluation tool was designed to distinguish between the effects of different management development interventions. The study was conducted over a period of three years. Evaluation levels were adapted from two primary sources, including Kirkpatrick's four levels of evaluation. However, learning and performance were collapsed into one level, which was called, content. Level one was called, process, and level four (now three) was called, outcomes.

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The program used to examine the evaluation tool took one year to complete and a total of three and a half years was covered in terms of the evaluation period (1997-2001). There were two phases to the training. The first attended by senior managers and the second by middle, front line managers. Results were positive for phase one of the program, but phase two did not show statistically significant differences in terms of improvement to competencies. Staff rated the managers higher at time two, but it was not significant. Reasons for the differences were said to include less coaching provided during phase two and pressure regarding performance increased for front line managers during that time period due to job demands.

The fifth journal article examined expert judgment in managers with regard to the method of acquiring it, specifically through formal education or through experience (Summers, Williamson, & Read (2004). Credit management decisions made by four groups of participants who varied in their degree of experience in credit management and in their education in finance and accounting. Seasoned credit managers who did not have a formal education, finance and accounting lecturers from a local university, and their students. The control group was made up of laypeople with no financial background at all. Decisions made fell into the first two functional responsibilities of credit managers: assessing credit risk and granting credit. Credit risk assessment tasks were deemed suitable for this study in that they have a high degree of context independence. Participants were asked to determine whether or not the company would fail. Also, they were asked to assess the likelihood of late payment; and asked whether they would grant credit to each company.

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Lecturers had the highest mean number of correct corporate failure predictions, closely followed by students, with managers and laypeople doing somewhat less well. "" Analysis revealed that both lecturers and students were able to predict corporate failure more accurately then laypeople ($t(78)=2.6$, $p< .01$; $t(78)=2.1$, $p< .05$). Moreover, there was a non-significant trend suggesting that lecturers outperformed managers ($t(78)=1.7$, $p<.1$). There was no difference between managers and laypeople. Lecturers and students generally outperformed credit managers on the prediction tasks, and the credit managers performed only slightly better than laypeople. In other words, Lecturers who had no experience in credit management, but did know the theories and concepts well, performed better than professional managers. In short, for at least one domain, it appears to be more efficient to learn from formal education than from experience.

The sixth journal article investigates the use of analogical learning methods in teaching negotiating techniques (Loewenstein, Thompson & Gentner, 2003). The use of analogical method consisted of the treatment group comparing two case studies with regard to the negotiation techniques used. The comparison treatment group simply was asked to read the individual cases (not to make comparisons). The control group had no training. Analogy training led to better performance than separate cases or no training. Teams that compared cases (n=24/60 = 40%) were more likely to form a contingent contract in the actual, face to face negotiation than were those who analyzed the cases separately (n=8/27 = 22%) a marginal association, X2 (n=97,1) = 3.50, p = .06. Members of the comparison group negotiating individually were more likely to form contingent contracts than were those in the baseline group, X2 (n=83, 1) = 4195, $p< .05$, but participants in the separate cases group were not, X2 (n=60, 1) <1, ns.

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The researchers also compared the performance of individuals who negotiated on their own, and the negotiating teams. They found no reliable difference in generating contingent contracts between negotiations among intact teams (n= 12/38 = 32%) and negotiations among dissolved teams, that is , solo individuals (n=20/59 = 34%), X2 <1, ns. Based on content coding of team reports (blind raters), those who drew comparisons (21/38 or .55) were more likely to induce the schema than were those who analyzed cases separately 12/38 or 32%), a reliable difference, X2 (n=76, 1) = 4.34, p< .05. Based on this, the researchers inferred that drawing comparisons facilitated understanding the general principle underlying the examples.

The seventh journal article conducted an analysis of an employee assistance supervisory training program (Donohoe, Johnson & Stevens, 1997). The study utilized a repeated measures design that included a pre, post and delayed post assessment six months after the training. Posttest scores were significantly greater than at pretest and delayed posttest; delayed post test scores were still significantly greater than at pretest. Results from a between-group one way analysis of variance (ANOVA) yielded significant differences f(2,138) = 196,84, p<.001 (see table 2 p. 30). Using Tukey's post hoc comparison, it was found that the post test scores were significantly greater than pre and delayed post test--M 16.80, std dev 1.4203 (post); M 14.8429, std dev 2.0046 (delayed post); M 12.2714, std dev (pre). Evidence suggests that some information is lost, however the overall training method appears to be effective.

The eighth journal article examined the importance of work environment on the application of trained skills on the job (Tracey, Tannenbaum, & Kavanagh, 1995). Three weeks prior to training a measure of supervisory behaviors was obtained from the

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participant and their supervisor. This measure, developed from the specific objectives outlined in the training materials and interviews with the trainers, was used as a baseline to account for behaviors that had been demonstrated by trainees before training.

At the end of training, learning was assessed and participants completed a transfer of training climate and continuous-learning culture questionnaire. Participants were also asked to distribute the questionnaire to their supervisor and four or five coworkers. 6-8 weeks after training, participants and their supervisors completed a post training behavior questionnaire, which focused on the same behaviors as the pre training questionnaire.

Learning outcomes consisted of the following: mean pre training scores for all was 9.71 (std 4.12) and mean post train scores for all was 16.63 (STD 2.82). A t-Test indicated a significant difference between pre and post training knowledge ($t(103) = 28.86$, $p<.01$, (i.e., trainees knew more about the behaviors at the end of training). Internal consistency established was .80 for learning retention and .71 for learning immediately after training. To avoid self rating bias, only supervisor ratings were used for post training assessment. Further, participants displayed more of the trained behaviors 6 to 8 weeks after training than 3 week prior. However, since a control group was not used, the results cannot be conclusively attributable to the training.

Climate and culture: Constructs were factor analyzed. Factors included six transfer of training climate scales (social and goal cures, task cues, no feedback consequences, negative reinforcement consequences, extrinsic reinforcement consequences, and intrinsic reinforcement consequences) and three continuous learning culture scales (social support, continuous improvement and continuous competitiveness).

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Results support the notion that both climate and continuous learning culture are important for the application of newly acquired behavior and skills.

The ninth, and final journal article examined the impact of multi-source / multi-rater (MSMR) feedback on management development (Bailey & Fletcher, 2002). This longitudinal study investigated measures by self, boss, as well first and second level subordinates with regard to management competencies. The assessment was administered in the context of a development program that had already been established in the organization. Ratings were compared over two administrations, with a period of two years between the first and second administration.

The results were mixed in terms of the benefits hypothesized by the researchers. The competence was perceived to have increased by all raters between time one and two. However, this increase was significant for three out of the four rater constituencies (target managers and both levels of subordinate staff). The most significant change was seen in first and second level subordinates perceptions. A ceiling effect was observed in bosses' assessments. At Time one the most favorable ratings were provided by targets bosses, and least favorable ratings were provided by targets second level subordinates. Bosses perceived an increase in competence, but this was not statistically significant. Initial self assess at time one were not found to be significant related to appraisal ratings. However, a significant positive relationship was observed for self assess at time 2 and post repeat feedback participant ratings, supporting the notion that MSMR feedback will enable managers to become more aware of behaviors rewarded by the organization. Further, the targets were largely unresponsive to ratings provided by their coworkers at time one and that more change occurred in coworkers ratings than in self assessments.

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Analysis of quality (trustworthiness) for these studies indicated that external validity with regard to testing within subgroups was limited for both dissertations and all nine journal articles (DIAD #6). In three instance, journal articles did not meet the standard of external validity with regard to sampling, and one was minimal (listed experience, education and training) (DIAD #5). Further, in one instance a journal article did not meet the standard for completeness of reporting, and two others were limited to only reporting methods, but not analysis (DIAD #8). In one instance, a journal article did not elude to the sample selection (DIAD #3).

Quantitative, non-experimental. There were two dissertations that utilized a quantitative, non experimental approach; both correlational. Correlational studies typically include the use of surveys, instruments and other data to measure and describe characteristics of individuals with averages, percentages and other descriptive data (Agresti & Finlay, 1997). While correlational research is useful in determining relationships among variables, it does not allow for generalizations to be made regarding the causal nature of the relationship (McMillan & Wergin, 2002).

The first dissertation was a study focused on participant activity in a multi-source, multi-rater (MSMR) development program through examining personality and performance (Louis-Slaby, 2004). Most data pertained to the participants, who were involved in a yearlong executive development program at a University; however, some data collected was secondary and used as part of the analysis phase of the research. The secondary data consisted of personality assessments and MSMR feedback that were both obtained prior to the study. Factor analysis was conducted using maximum likelihood method. Quartimax rotation was also used, which enabled a general factor to emerge.

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Approximately 63% of variance was explained as "activity in a development program." Further, two secondary factors emerged—feedback acceptance and organized approach to development.

Eleven instructors at the University participated in the study. They provided feedback on participants that they taught in the program via a rating form. Reliability was alpha = .97. The first hypothesis, a negative relationship between performance ratings and general activity in the development program, was not supported. Ratings from all four sources (self, boss, peer, and subordinate) were not significantly correlated with activity in a development program. However, peer performance ratings were significantly related to both feedback acceptance ($r=.19$; $p<.05$) and organized approach to dev ($r=.18$; $p<.05$). Performance ratings from employees also significantly correlated with feedback acceptance ($r=.20$; $p<.01$) and organized approach to dev ($r=.22$; $p<.01$). The hypothesis that personality factors (e.g., extroversion) would have a relationship to activity in the development program was not supported.

Finally, the third hypotheses predicted personality would play a role in predicting activity and performance ratings. Performance ratings submitted by peers emerged as the most important predictor of feedback acceptance and explained 31% of total variance. Employees were shown to account for 30% of variance. However, effect sizes were week.

The second dissertation examined the effects of training for managers to gain employee trust (Norman, 2003). The determinants were work related attitudes and emotional well-being. Participants were randomly assigned to a treatment or control condition. Repeated measures ANOVAs were used to assess change in manager

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behavior and employee attitudes and emotions between a baseline measure and a follow up. A series of regression analyses were run to further examine the relationship between manager behavior and employee trust. Two factors emerged; ongoing behavior (listening and giving feedback, applying company values, applying consistent values, and making an effort to understand employee values), and scheduled behavior (quarterly and annual recognition, scheduled coaching, creating a development plan with employees, setting objectives, and delegating meaningful assignments).

Baselines of scheduled and ongoing behaviors were entered into regression equations in order to predict subordinates perceptions of managers' benevolence, integrity, ability and trust toward the manager. Finally, regression analyses were used to examine the relationship between trust and employee work related emotional well being.

Trust toward managers was associated with higher levels of positive affect ($p<.001$) higher scores on pleasure at work ($p<.001$), less tiredness at work ($p<.001$), less anger ($p<.001$), and greater job satisfaction ($p<.001$). Increase in trust between baseline and follow up were associated with decreases in anger ($p<.05$) and increases in job sat ($p<.05$). Results indicate a relationship exists between trust and work related emotional wellbeing.

Qualitative, Case Study. Qualitative research designs focus on understanding a phenomenon from the perspective of the participants and context being studied (Creswell, 1998). Further, qualitative designs approach the research with a philosophical view that consists of socially constructed reality (and constantly changing), natural settings, rich descriptive narratives, inductive data analysis, and an emergent design in terms of procedures (McMillan & Wergin, 1997).

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The qualitative research design used with regard to the sample in this study consisted of case studies. The case study approach provides an in-depth understanding of a phenomenon within a single case that can lead to theory building or provide a rich description (Creswell, 1998). The intent is not to generalize the findings, but rather describe a phenomenon within a single case or multiple cases (Creswell). The studies that are a part of this meta-synthesis consist of single cases. In one study, a retrospective design was applied within the Case Study method, in which data was collected after the fact. Retrospective has also been referred to as Ex post facto design (McMillan & Wergin, 1997). In effect, events have already occurred in the past and are being studied in the present.

There were seven qualitative, case studies included in this meta-synthesis. Of those seven, four were dissertations and three were journal articles. The first dissertation was an exploratory case study utilized with a work-based learning (action learning) intervention (Waddill, 2004). The intervention was a virtual asynchronous online management course on the topic of action learning. After the course, each participant was interviewed. All interviews occurred within one week of the course and were conducted by phone. All were transcribed and resubmitted to interviewees for confirmation, correction and additional comments. The transcripts were then coded (type of coding applied was not specified).

The second dissertation utilized a retrospective design in order to investigate discontinuous events (informal learning), more specifically organizational growth events that had significantly contributed to organizational learning within the company as it grew in age and size. Individual semi-structured interviews were conducted and themes

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and patterns were induced into a composite illustration of organizational growth events and learning processes over a fifteen year period (Darnell, 2003).

The third dissertation utilized a case study to ethnographically describe practices and organizational supports that fostered deep (double loop) learning in its leaders (Hall, 2001). The research design consisted of opinion-polling of subject matter experts, semi-structured interviews and participant observation in ethnographically describing the practices and organizational supports used to foster deep learning. A vivid description is provided of a company operating under a silo-centric, command and control hierarchical leadership, and a focus on customer service. Further, the researcher describes the setting in which a leadership retreat (the focal point of the intervention) takes place.

The fourth dissertation utilized a grounded theory whereby the researcher explored that case through the use of a preplanned, structured interview guide, but at the same time allowed for openness to the direction of the conversation (Kiehl, 2004). The researcher used a combination of life story, critical incident, and focus group interview techniques, which all together provided for an emergent process. To supplements interviews, observations were of the plants, offices, and meetings were made, and secondary data was collected. Thus, triangulation was achieved and supported validity. The theory generated from this study was called, locker room learning (LRL), which included both individual and organizational level learning and was essentially double loop learning in the specific case of organizational process change.

The three journal articles consisted of a work-based learning intervention and the investigation of a management development system, which were both in the UK, and an

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exploration of discontinuous learning events (informal learning) with regard to six entrepreneurs that started and grew their businesses.

In the first journal article, which explored the role of motivation to learn (Kinman & Kinman, 2001), semi-structured interviews were conducted with participants and lecturing staff. Literature was reviewed on motivation and learning styles of mature students, and was used as a basis for examination and coding of data from open-ended questionnaires and semi-structured interviews.

The second journal article involved a longitudinal study, spanning three years (1991-1994) (Antonacopoulou, 1999). Semi-structured interviews, observation, questionnaires, and critical incident technique were utilized. Interviews covered perceptions of the current management development training system, main influences on management training in the organization, perceived role of training to individual development, and perceived association between learning and training and the level of utilization of learning from training (transfer). An organizational perspective was obtained through records, archived materials, and interviews conducted with Human Resources and Training staff regarding perceived contribution of management training to total value of the company. Analysis of findings focused on three levels—individual manager, organizational systems (training and development) and understanding the interaction between personal and organizational factors and the impact on individual perceptions with regard to the association between training and learning.

The third journal article explored the development experience of six entrepreneurs within the context of small business ownership and growth (Cope, 2003). Development was explored through the lens of discontinuous learning events. Further, the concept of

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critical reflection was explored, as were the distinctive forms of higher level (double loop) learning from facing, overcoming and reflecting on significant problems or opportunities during the career of the entrepreneur. In-depth, unstructured phenomenological interviews were conducted with the six participants, which delved into the history of their business. Critical incidents were an integral part of the interview process. Interviews focused on memorable moments. The researcher acknowledges that they played an active role in helping the interviewee reflect deeply on the occurrences—the researcher called it a, "sense-making process" whereby the participant was asked to clarify meanings and importance attached to events. The results were illustrated in two case examples that described the discontinuous events that triggered deeper learning. The learning was then framed in terms of double loop and transformative learning.

With regard to limitations in these studies, in two out of the three journal studies, an audit trail was not provided (DIAD #8) and standards for external validity, as it pertains to sampling were not met (DIAD #5). None of the three articles met the standard for external validity with respect to testing within subgroups (DIAD #6). Out of the four dissertations, none of the case studies met the standard of external validity with respect to testing within subgroups (DIAD #6), but met all other standards.

Mixed method. Mixed method designs are seen as the third major research paradigm, and the primary reasons given for using a mixed design is compatibility as well as an adherence to a philosophy of pragmatism (Onwuegbuzie & Teddlie, 2003). In terms of compatibility, the idea is that quantitative and qualitative methods are compatible, that is, they can both be used in a single research study. The philosophy of pragmatism says that researchers should use the approach that works the best in a real

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world situation (Onwuegbuzie & Teddlie).

There were four mixed methods studies; two of which were journal articles and the other two were dissertations. The first journal article examined the extent to which managers engaged in informal learning, perceptions of support in the environment, and the level of managerial proficiency related to transfer of learning in twenty core managerial skills (Enos, Kehrhahn & Bell, 2003). In a prior study conduct one year prior to this study, the twenty competencies were identified. All data were collected using a single self report questionnaire. Cronbach's alpha was measured for internal consistency and demonstrated between .87 and .93 on all scales.

The second journal article was an examination of work-environment support factors affecting transfer of supervisory skills training (Cromwell and Kolb, 2004). Trainees completed a self-report five part questionnaire and short answer questions. Questions were focused on transfer of skills from supervisory training and the degree of organizational, supervisor, and peer support. Also, the trainees direct managers completed a three part questionnaire and short answer questions, with regard to the trainee; specifically, the trainees ability to transfer training and their own perception of organizational and supervisor support.

The first dissertation was focused on an experiential education program (informal learning) in Tavistock style with executives (Rodenbaugh, 2002). The study utilized a Q-methodology and a questionnaire, which were augmented with personal interviews. Effectiveness of the training was investigated from four perspectives: a) changes in perception of authority relations as experienced by executives, b) the role of locus of control in changing perceptions of authority relations, c) the executives' satisfaction with

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the learning they experienced, and the approach take to provide it, and d) the transfer of learning (i.e., changes made) to the work environment. Triangulation was used to counterbalance the limitations of each method.

The Q-methodology examined the participants' points of view of authority relationships through their subjective engagement with a group of statements. Factor analysis of the Q-sorting resulted in several factors representing each respondents' point of view, and the association of each respondent with each point of view as indicated by the magnitude of his or her loading on that factor. Factors were made relative to three mental models of authority—dependency, counter-dependency, and interdependency. Before the workshop, immediately after, and 6 weeks after, factors were compared to answer to a threefold question: what are the participants points of view about authority relations, do they change after a workshop, and is the role of locus of control involved? Twenty one-on-one, open ended interviews were conducted in order to augment the investigation and provide further insights. Finally, a self report measure of satisfaction was used 6 weeks after the training to assess perceived outcomes and satisfaction with the training.

The second dissertation evaluated the effectiveness of a mentoring program (also categorized as informal learning), whereby written instruments were used on both the mentors and mentees (Stromei, 1998). Instruments included the Leader Behavior Analysis II (LBAII) (pre and post test measures) the Myers-Briggs Type indicator was administered (pretest) , and a mentoring functions scale consisting of 30 questions was given to the mentees to assess their overall satisfaction (posttest). In addition, interviews

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were conducted with a random sample of pairs. Methods of analysis included descriptive statistics, correlations, t-Tests, ANOVAS, and regressions.

In one journal study (Enos, et al.), the completeness of report was found to be limited (DIAD #8) and there was no testing within subgroups (DIAD #6). Further, contamination may be a concern given only content validity was identified (through pre-established measures). Both of the dissertations, as well as the second journal article met all DIAD criteria standards.

Action Research. Action/Practitioner research is undertaken by practitioners in their own setting for the purpose of understanding their organization and how to improve it. Action research can utilize any of the designs mentioned above (experimental, quasi-experimental, non-experimental, or qualitative). What distinguishes action research is that some form of action, such as policy change, is expected as a result of the research (Coghlan & Brannick, 2005).

Action research was applied to a Large Scale Intervention (LSI) at a state government's transportation department (Smilonich, 1999). This intervention was part of a dissertation who was also an employee at the organization. It was a longitudinal study to show whether the LSI had a substantive and lasting impact (it did not). The underlying purpose of the study was to positively impact the commitment level of employees around a transformational change through whole system learning. The author also wanted to better understand organizational learning in the context of researcher's organizational system.

The LSI used a real time strategic change model, and included three separate phases spread out over a twenty month period. Each phase consisted of an event focused

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on a specific group: First, a 2-day district manager's retreat, second a 3-day event focused on middle management, which took place one month after the first event; and third, a large group, 3-day event involving all employees, which occurred sixty days after the second event. Each event was a unit of analysis for the researcher whereby descriptions of behaviors, actions and conversations were documented and later interpreted. As is the case with typical action research based projects, adjustments were made as needed.

While bias is inherent in making observations and interpreting behavior, and should be considered a limitation of this study, all standards were met with regard to the DIAD.

As outlined above, the studies included in this meta-synthesis come from diverse institutions, fields of study, and differing approaches to study. The studies reviewed include multiple factors, variables and themes. Taken together, the literature presents the construct of learning transfer at the far and/or creative level as a very complex and multi-faceted phenomenon.

Samples. The samples used within each of the studies included in this meta-synthesis were reduced to the following categories: a) Mid level managers, b) Supervisor / Jr. Mgr, c) Executive / Sr. Mgr, and d) Mixed (i.e., either hierarchical—senior, middle, and junior level managers; or the study sample consisted of both managers and non-managers. The majority of studies (seventeen) fell in the Mixed category, whereby twelve studies contained a mix of managers and five contained a mix of managers and non managers. The decision was made to include the studies that had a mix of managers and non managers because the results obtained through the study contained potentially important information for this meta-synthesis.

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Mid-level managers participated in the interventions that consisted of general management development, informal learning (discontinuous events and mentoring), MSMR, Trust, and Decision Making/Expertise. Supervisors were targeted for interventions that consisted of general supervisory skills (EAP, Peer Support Network), informal learning (self directed), and Interpersonal skills (behavioral modeling and general). Executive and senior managers were involved in informal learning (discontinuous events, experiential education), interpersonal competency, and work-based learning (action learning).

Given the majority of studies utilized a mixed group, the number of studies with in each "pure" group were small. The only theme that emerged was the informal learning was utilized across the board. For mid-level managers the focus was on discontinuous events and mentoring. Discontinuous learning events were also focused on for executives (as well as experiential education). Supervisors participated in informal learning geared toward self-directed learning.

Theoretical Framework. Meta-theory involves the analysis of primary studies for the implications of their theoretical orientations (Paterson, Thorne, Canam, and Jillings, 2001). Paterson et al. outline four general orientations: Theory testing, generating, evaluating and framing. Further, there are three types of types of theories that can be encountered (Paterson et al.): 1) grounded theory, which is qualitative in nature and generated inductively from grounded data (Lincoln & Guba, 1985); 2) substantive or midrange theory, which is used to orient the research with regard to a specific concept; and 3) grand theories, which tend to be overarching and general in their claims (Paterson, et al). The studies in this meta-synthesis were primarily made up of theory framed

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research that were substantive in nature, i.e., oriented the research to a specific concept or construct.

The procedures followed to analyze the theoretical frameworks utilized within this meta-synthesis consisted of reading the primary research reports and noting the theoretical perspectives within the matrix. According to Paterson, Thorne, Canam, & Jillings (2001), "the most significant step in meta-theory is a careful and thoughtful reading of the primary research reports to identify the various ways in which theory may have influenced their shape and nature" (p. 95). By concentrating not only on the theories espoused, but also the cues that were available, such as terms that were used consistently (e.g., change) but not labeled as part of a theory, I was able to analyze the study in terms of overt theories, as well as components of theories that may have been unintentionally influential (Paterson, et al.).

The next step was to create categories based my interpretation of underlying themes from each study. Theories that framed the studies contained in this meta-synthesis were categorized as organizational, social/behavioral, and individual/cognitive (see table 8). While the categories identify underlying themes, it is important to note that some of the theories were overtly, as well as unintentionally, combined within individual studies. In other words, some studies that utilized organizational theories were combined with social/behavioral theories or individual/cognitive theories. Likewise, some studies that utilized social/behavioral theories were combined with organizational or individual/cognitive theories.

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Categories of Theoretical Frameworks

Organizational	▪ Organizational learning ▪ Organizational Change ▪ Systems Theory ▪ Complex Adaptive Systems ▪ Double-loop learning ▪ Social Constructivist (Organizational Learning) ▪ Transfer Environment-Organizational Climate & Continuous Learning Culture ▪ Organizational Trust ▪ Evaluation (levels)
Social / Behavioral	▪ Social learning theory ▪ Team member exchange theory and Social networks theory ▪ Experiential Learning Theory ▪ Informal learning ▪ Social cognitive ▪ Social practice ▪ Learning transfer – Organizational Climate ▪ Group dynamics
Individual / Cognitive	▪ Transformative Learning ▪ Analogical learning and structure-mapping theory ▪ Brainstorming (creativity) ▪ Interpersonal Style ▪ Adult learning ▪ Self-Directed Learning ▪ Self-Image formation ▪ Personality ▪ Motivation theory (Intrinsic / Extrinsic)

Table 8, Theoretical Frameworks

Cope (2003) conducted a study exploring discontinuous learning events experienced by entrepreneurs. The author contended that double loop learning (organizational) and transformative learning (individual) theories were integrally connected. The author suggested double loop learning involves a renewed understanding of organizational processes and strategies; which emerges from awareness of one's assumptions and beliefs, and involves profound changes in self. These changes are resultant through critical inward self reflection, which is a component of transformative learning, as defined by Mezirow (1991). While the two constructs are distinct, the author

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suggested it is hard to differentiate between double loop and transformative outcomes because they are interdependent (Cope, 2003).

Also, a study by Benischek (1996) used a social learning theoretical framework, which was also laden with an individual/cognitive component that was influential. Specifically, Benischek utilized locus of control theory as part of a general management development program. The author contends that locus of control occurs within the context of social learning theory. According to locus of control theory, "a reinforcement acts to strengthen an expectancy that a particular behavior or event will be followed by that reinforcement in the future" (p. 42). Reinforcement is garnered through the environment (supervisor acknowledgement or peer support) and in this light, social learning theory is described as behavior in terms of a reciprocal interaction of person and environment. Rotter's Locus of control theory also has a cognitive component in that the construct refers to the extent to which an individual feels in control of the reinforcements that occur relative to their behavior (Benischek).

In another instance, a social learning theoretical framework was espoused with regard to mentoring, which utilized Behavior modeling as the intervention (Bostain, 2000). Behavior modeling was described as behavior that is observed and subsequently leads to changes in others' thoughts, feelings, and attitudes (Bostain). The author contends that observation of direct experiences influence human thought, affect and behavior. Specifically, the author suggested that individuals select, organize and transform stimuli. This description was interpreted to mean that an individual/cognitive component possibly influenced the study as well; even though it was not explicitly stated.

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Based on the categories of theoretical frameworks that emerged from the studies (see table 8), it is clear there was not one dominant category utilized. Out of the thirty-one studies, there seemed to be a balance between organizational, social/behavioral and individual/cognitive frameworks. However, within each category, some frameworks were utilized more than others. For example, there were six studies that explicitly outlined organizational learning as a framework, and six others that explicitly framed their study with social learning theory. On the other hand, there were three studies that explicitly used experiential learning theory and three others that used adult learning theory. Further, there was one study that utilized organizational trust and one other that utilized self-image formation. Finally, it should be noted that there were four studies that did not explicate a theoretical framework; rather, the studies were tied applicable literature.

Overall Themes

Interventions. As outlined in table 6, Interventions were sorted into categories, which were broad in nature and made up one or more interventions. Categories included Informal Learning, Multi-Source / Multi-Rater (MSMR), General Supervisory Skills Training, General Management Development, Interpersonal, Double Loop Learning, Work-based learning, Resiliency, and Analogical Learning. Informal learning had the majority of interventions (eight) and many were framed by theories that included organizational learning, organizational change, transformative learning, double loop learning, intrinsic motivation theory, and social theories such as social practice, social learning, social constructivist learning, and social cognitive theory. Further, informal

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learning was used across samples (supervisor, mid-level manager, senior/executive and mixed groups).

Methods. Within the primary research studies included for this meta-synthesis, there were six types of research methods represented, a) Quantitative experimental research (true experimental), b) Quantitative quasi-experimental research, c) Quantitative non-experimental designs (correlational), d) Qualitative research (Case Study), e) Mixed-methods design, and f) Action/Practitioner Research. The majority of studies in this review, eleven, utilized a Quantitative, Quasi-Experimental research design (see Table 7).

In thirteen out of the thirty-one studies (42%), measures were applied at the organizational level. In other words, performance and organizational impact were examined and/or measured. In 58% of the studies, measures were applied at the individual level via a pre and post test regarding learning or by examining behavioral changes as observed by peers or subordinates.

The DIAD (Banning and Cobb, 2001) was used to establish quality with regard to the studies in this meta-synthesis. The analysis was concerned with appraising the quality for exclusionary purposes, to outline which methods were used with which interventions, and to determine limitations within the studies that may have shaped the results. Overall, the DIAD components that seemed lacking included DIAD #6, external validity with regard to testing within subgroups, and to a lesser extent, DIAD #5, external validity, sampling. Fourteen journal articles were found to be lacking or limited in terms of DIAD #6, and four journal articles were lacking or limited in terms of DIAD #5.

Samples. Given the majority of studies utilized a mixed group, the number of studies with in each "pure" group were small. The only theme that emerged was the

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informal learning was utilized across the board. For mid-level managers the focus was on discontinuous events and mentoring. Discontinuous learning events were also focused on for executives (as well as experiential education); and supervisors participated in informal learning geared toward self-directed learning.

Theoretical Framework. As outlined in Table 8, Organizational learning theory has been used in six studies as the underlying theoretical framework. Moreover, social learning theory (in several variations) was utilized in eleven studies. In other words, 55% of theories utilized to frame the studies in this meta-synthesis were focused at a group or organizational level.

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Discussion

Chapter Five

"I was gratified to be able to answer promptly. I said, I don't know."

Mark Twain

Organizations need to adapt, transform, innovate and create in order to survive or renew (Vaill, 1989; Sadler, 2001). As agents of the organization, managers play a key role in the adaptation, transformation, innovation and creation process (Paauwe & Williams, 2001; Ruegg-Sturm, 2005). Kirchhoff (1977) stated organizational effectiveness "emerges as the ultimate outcome of a combination of managerial effectiveness and factors not under organizational control" (p. 348). Learning transfer is complex, multi-dimensional, and in many ways...not under organizational control. Transferring past learning to novel contexts is not readily done by individuals within organizations, and is difficult to capture in terms of measurement (Haskell, 2001).

I started this study with the hope of findings answers. Answers to questions about what management development interventions achieve what results utilizing what research methods, with what people, in what settings and utilizing what theoretical frameworks. The interpretations made from this meta-synthesis do not consist of "I don't know," as the quote above suggests; rather, the interpretations made can be likened to "it depends."

This chapter will outline my interpretation of far and creative transfer as it relates to the thirty one studies in this meta-synthesis. Also, I will discuss implications, and make recommendations based on my interpretations. Further, I will outline implications for future research, and finally I will provide a conclusion to this study.

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Interpretation

As with past research (Ford & Weissbein, 1997), some studies in this meta-synthesis were able to provide evidence of transfer (to varying degrees), while others were not. The reasons for this seem to be due to self-imposed obstacles from trainees and the collective organization (i.e., the way individuals think) and issues around measurement; specifically, how the content of management development should be measured, the units of analysis (individual vs. organizational), and the multi-dimensional nature of the transfer construct.

There are three primary interpretations I have made based on this study. Each are summarized here and elaborated upon in the following pages. The first is that in order to attain higher levels (far and/or creative) of learning transfer, managers and their respective organizations must think differently; they must think in terms of transfer (Hall, 2001; Kinman & Kinman, 2001; Loewenstein, Smilonich, 1999; Louis-Slaby, 2004; Thompson & Gentner, 2003). The second interpretations is that it may be beneficial to measure management development over extended periods of time, at the organizational unit of analysis (Darnell, 2003; Waddill, 2004; Wyszynski, 1998).

Finally, some studies demonstrated that procedural, straightforward knowledge and skills that can be found at the lower levels of learning transfer (i.e., application) and are easily trained utilizing formal methods (Kinman & Kinman, 2001; Summers, Williamson & Read, 2004). It seems that when delving into exploration at the higher levels of learning transfer, one must approach the learning and the measurement of learning transfer holistically and ecologically; that is, the "hard to train" skills are those found at the higher end of the transfer scheme (i.e., interpersonal skills) and involve

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cognitive, emotional, behavioral, as well as environmental factors (Cope, 2003; Enos, Kehrhahn & Bell, 2003; Hunt & Baruch, 2003; Maddi, Kahn & Maddi, 1998; Norman, 2003).

Transfer thinking. In terms of the first interpretation, it would seem that achieving higher levels (far and/or creative) of learning transfer requires that we think differently in our organizations. According to Haskell (2000), the use of analogical thinking, understanding our mental models, and double-loop learning are evident in far transfer as well as creative transfer. Development in organizations that support these transfer mechanisms seems to be of critical importance.

In the case explored by Loewenstein, Thompson & Gentner (2003), it was found that by applying analogical thinking, they were able to facilitate understanding the general principle (i.e., abstract) underlying the examples provided and therefore transfer learning to a novel context. In a similar vein, Cope (2004) observed different levels of learning, from the more practical and routine, the a more adaptive learning that generated new and different ways of thinking and producing action thereby forcing individuals to question their established ways of doing things. Discontinuous events, experienced in the workplace were able to bring about the higher levels of learning transfer via double-loop learning.

Louis-Slaby (2004) studied the use of multi-source / multi-rater feedback in terms of how feedback motivates managers to pursue development activities. She found that feedback acceptance is particularly important, and that the predictive power associated with peer and employee performance ratings was higher than that of the participants' managers (even though there was a weak effect size). This supports the notion of

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utilizing MSMR as a development tool, but moreover, it suggests that our traditional view (mental model) of how to measure performance of managers in organization is limiting. Perhaps if organization's are to become "learning" organizations, the way they think about learning and performance must change. Block (1994) stated that learning and performance are necessarily becoming one and the same.

Kinman & Kinman (2001) investigated a program in the UK that implemented a traditional management development program whereby the local university provided courses onsite (e.g., work-based learning) as part of a degree program. The purpose was to evolve a culture of life long learning. They found that individuals were working from primarily an extrinsic motivation (e.g., pursue learning for the external recognition), and that this was supported in the work environment. The participants were found to excel at the straightforward, step by step procedural types of activity; and they performed less well in terms of creativity and abstract thought. In fact, they struggled with analytical thinking. This suggests that how we think about learning impacts our ability to enact a learning culture.

Measurement. The second interpretation drawn from this meta-synthesis is that it may be beneficial to apply measurements that are conducted over the long term and focused on the group and organizational units of analysis. Ford & Weissbein (1997) came to a similar conclusion in their meta-study and found that between 1988 and 1997, more studies had utilized "a greater variety of measures and time intervals..." (p. 24).

There seemed to be two primary obstacles to measuring transfer; the content the researcher was trying to measure may not be measurable in the short term (e.g., organizational growth events) and measures themselves were lacking (e.g., only self

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reports were used). In this meta-synthesis, there was a mix between studies that utilized a longitudinal versus short term approaches. Further, thirteen studies (42%) utilized 'units' of measurement that went beyond the individual level of analysis.

In terms of studies that used shorter term approaches, at least in some cases, it seemed to be due to timing restraints within the organization of study, more than intentions of the researcher. This restriction may impact our ability to understand transfer. For example, Waddill, (2004) found that "results" (as defined in Kirkpatricks fourth level of evaluation) may be obtained, but only in the long term, and that effects of behavioral change may take place after the measurement period has ended (in this case five weeks).

Managerial development content consists of critical factors that cannot be taught or measured easily (Paauwe & Williams, 2001). The principles, concepts and techniques needed for managerial development are the things that are not effectively learned in formal training (Paauwe & Williams, 2001). Bereiter and Scardamalia (2003) suggest examples include interpersonal skills and building relationships; which the authors state can best be learned by immersion in the environment. Sternberg & Horvath (1999) add the importance of intuition; which Paauwe & Williams (2001) contend intuition can be learned, and is learned through experiential and social conditions, and upon reflection. Brown & Duguid (2000) provide additional insight and suggest that individuals are contextual thinkers. In other words, individuals take action based on learning generated from the interaction within a social network in the organization.

The studies included in this meta-synthesis have provided examples of learning interpersonal skills and intuition (Bostain, 2000; Waggoner, 2001; Hall, 2001), as well as mechanisms to learn such as experiential, social conditions, and the use of reflection

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(Cope, 2003; Cromwell & Kolb, 2004). Further, some studies underscored the contextual nature with which we think, learn and take action (Tracey, Tannenbaum & Kavanagh, 1995; Loewenstein, Thompson & Gentner, 2003; Darnell, 2003: Kiehl, 2004). Ultimately, the studies in this meta-synthesis provide a broad perspective on the deeper level of learning that is required to achieve far and/or creative transfer.

In a case supporting the need for varied measures, Wyszynski (1998) discovered that the need for measures at the group and organizational levels are necessary in understanding effectiveness of a training program. Even though the managers in her study perceived an improvement from time one to time two, the data did not indicate the impact of that self-perceived improvement on the organization. Also, the author found that even though a positive relationship was found between the managers' perception of their own improvement and the subordinates' perception, it was not confirmed due to the differing scales being used to measure at each of these levels (Wyszynski). In effect, the method used to research the intervention impacted the results.

Ecological thinking. The third interpretation I have drawn from this meta-synthesis is that when delving into exploration at the higher levels of learning transfer, one must approach the learning holistically and think ecologically. The "hard to train" skills are found at the higher end of the transfer scheme (i.e., interpersonal skills) and involve cognitive, emotional, behavioral, as well as environmental factors.

Enos, Kehrhahn & Bell (2003) found that two skills that were taught as part of an interpersonal skills training appeared to be less responsive to training than any others; decision making and giving one to one feedback skills, both of which are cognitive in nature. The authors suggest that training may have little impact on the ways in which we

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think, as well as on the way we are hard wired (e.g., our personality). For example, the authors suggest that for introverts, giving feedback may be more difficult, and therefore harder to "train." A longer term development process is required. Further, the authors found that meta-cognitive knowledge and self regulation work together in a dynamic fashion to produce effective learning. They suggested that proficiency was a product of meta-cognitive ability.

Smilonich (1999) demonstrated the need for a holistic approach to learning and development when he presented findings from his study that suggested behavior changes, that he attributed to organizational learning, did not transfer because the learning that occurred was context-laden and counter-cultural within the organization. In other words, the behavioral changes that were achieved and observed directly after the LSI process were not sustainable and the system returned to its former state of equilibrium.

Hall (2001) found that critical reflection played a large role in learning at deeper levels. Cope (2003) had similar conclusion based on his study of entrepreneurs. He found that learning outcomes were the result of inward critical self-reflection, and suggested that entrepreneurs can experience distinctive forms of higher level learning from facing, overcoming and reflecting on significant problems. This study also found that entrepreneurs had a multifaceted and emotional relationship in the context of their organizations, and this had implications for learning at higher level.

The context, or environment, within the organization plays a key role. Wheatley (1992) maintained that managers have to manage and adapt to constant internal changes on a day to day basis. Further, Bereiter & Scardamalia (2003) suggest that transfer is more about the learning environment than other conditions (e.g., training design).

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Tracey, Tannenbaum & Kavanagh (1995) found that work environment, as it pertained to learning transfer was made up of climate and culture factors. Specifically, transfer climate was made up of social, goal and task cues, as well as feedback, and reinforcement (both extrinsic and intrinsic). Also, it was found that continuous learning culture was made up of social support, continuous improvement and continuous competitiveness. Their results support that work environment is important for the application of newly acquired behavior and skills.

Together, these particular studies provide insight into learning transfer at the far and creative levels. They suggest a need to think about transfer from a multidimensional perspective--ecologically. The notion of multidimensionality has been strongly supported by Holton, Baldwin & Naquin (2001). Understanding multidimensional constructs can be achieved through ecological thinking.

Ecological thinking has been defined in terms of asking the question, "What are the mutually interdependent relationships among behavior, persons and environments" (Banning, 2003). According to Capra (1996), ecological thinking can be defined as consisting of relationships, connectedness, and context. Capra suggests that in science this kind of thinking is known as systems thinking. The author states that system thinking views a problem or phenomena within the context of a system. The system is viewed as an integral whole whereby no part can truly be understood if it is viewed separate from the entire system (Wheatley, 1992). It is evident to me that the notion of learning transfer, at the far and creative levels, should be thought of and studied *only* in terms of an ecological framework, measured at the group and organizational level and over the long term.

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Implications

There are three primary implications with regard to the interpretations outlined above. First, organizations may be limiting their ability to change and subsequently remain competitive by not placing emphasis on long term managerial development (versus training and education) of skills and abilities that are demonstrated in the realm of far and creative transfer; such as, interpersonal skills, decision making and managing change. Further, organizations may limit their capability to grow and remain competitive by not utilizing learning mechanisms most amenable to far and creative transfer such as analogical and double loop learning. Further, managers may limit their potential to change and grow professionally if they do not place emphasis, in a self directed way, on these same elements.

Second, measurement is a factor that needs to be adjusted (longer-term and at an organizational level), as outlined in the preceding sections. Continuing to measure and evaluate management development based on participant reactions and immediate or short term learning via pre / post tests, is short sited at best. It is extremely limiting in terms of advancing our knowledge and understanding learning transfer at the far and creative levels. Yet, it is easy, takes the least amount of time, and in many cases the only form of evaluation supported by the organization in terms of allocated resources.

Third, and I think fundamentally most important, is that unless organizations and individual managers embrace a different way of thinking, i.e., transfer thinking and ecological thinking, they will continue to waste precious resources by blindly using a training or educational mechanism rather than a developmental approach; and fail to question the assumptions that inevitably maintain a status quo in organizations and limit

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the extent to which individual managers change, grow and remain competitive in today's marketplace (e.g., double loop learning).

Recommendations

Organizations should position HRD or Training and Development practitioners in a consultation role and cultivate partnerships between the practitioners and managers; whereby together they place emphasis on longer term approaches to management development, utilize the tools and approaches (design, delivery, and measurement) most applicable to far and creative transfer (e.g., analogical learning) and focus on those skills and abilities that equate to far and creative transfer (e.g., double loop learning).

Implications for future research

Research perspectives from cognitive, educational and behavioral psychology have to merge with research perspectives from human resource and management learning and development. A partnership must be forged whereby both philosophical positions and approaches to research are integrated in order to understand learning transfer from an ecological (i.e. multidimensional) perspective.

The research methods used to measure far and creative transfer have to go beyond simple self assessments (reactions) and pre / post assessments (learning). Instead, measures should place more emphasis on coupling learning application (behavioral) and organizational impact (performance). This requires a longitudinal approach and measures that are geared toward linking individual learning and performance with organizational change, learning and growth. Some of the studies in this meta-synthesis attempted measurement at the organizational level (42%). Even though measurement at this level was not found in the majority, there was a positive mix between dissertation,

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HRD or management-related journals and psychology journals. Specifically, six studies were represented by dissertations (Bostain, 2000; Darnell, 2003; Hall, 2001; Kiehl, 2004; Smilonich, 1999; and Wyszynski, 1998), and seven were journal articles; of which four studies were in HRD or management development related journals (Antonacopoulou, 1999; Cope, 2003; Cromwell & Kolb, 2004; and Tyson & Ward, 2004) and the other three were found in psychology-related journals (Baily, 2002; Tracey, Tannenbaum & Kavanagh, 1995; and Warr & Bunce, 1995).

Finally, more research is needed in terms of creative transfer (Haskell, 2000); in particular memory research, scheme theory and information processing theories should be explored in the context of management and organizational innovations.

Conclusion

This meta-synthesis was the beginning of a journey; an exploration into where only a few have gone before--the higher (far and creative) levels of learning transfer. The construct of transfer in this meta-synthesis, was framed primarily by social learning and organizational learning models and concepts, and is still very much in its infancy in terms of operationalization. There is much uncharted territory yet to be discovered. Yet, at the same time, the construct of transfer has a rich history that can be traced back a full century (Thorndike, 1901; Judd, 1908) and is useful to understand in terms of the varying perspectives and iterations (Broad & Newstrom, 1992; Ford & Weissbein, 1997; Holton & Baldwin, 2003), as well as levels such a application, near, far and creative (Haskell, 2000).

In a few instances (Cope, 2003; Darnell, 2003; Hall, 2001; Kiehl, 2004; Loewenstein, Thompson & Gentner, 2003; and Smilonich, 1999), the primary studies

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included in this meta-synthesis provided a window into the next evolutionary phase of transfer research; specifically, the far and creative levels, operationalized as analogical and double-loop learning. Within these studies there is great promise in learning transfer in terms of organizational growth and renewal.

It has been a humbling experience to learn from the authors represented in the primary studies that made up this meta-synthesis. Many have made a positive impression on the field and will become foundations from which to build upon the construct of learning transfer. If nothing else, this meta-synthesis should be reviewed for the literature that I have been fortunate enough to find and compile.

In many respects my study is mired by flaws and limitations in terms of methodology and limitations of the researcher herself. Looking beyond these limitations, I can't help but feel excited for the potential for learning transfer; that is far and creative transfer, as a mechanism to organizational learning, change, performance, and growth.

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Appendix A

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Article ID	29J	12J	46J	16J	23J	45J	24J	20J	10J	48J	44J	18J	1J	3J	42J	4J
Article Title	Training does not imply learning: the individual's persepctive	The impact of multiple source feedback on management development: Findings from a longitudinal study.	Understanding how creative thinking skills, attitudes, and behaviros work together: A causal process model	Entrepreneurial learning and critical reflection: Discontinuous events as triggers for 'higher-level' learning.	An Examination of Work-Environment Support Factors Affecting Transfer of Supervisory Skills Training to the Workplace	An analysis of an employee assistance supervisry training progam	Informal Learning and the Transfer of Learning: How Managers Develop Proficiency	Developing top managers: The impact of interpersonal skills training.	The role of motivation to learn in management education.	Analogical Learning in *Negotiation* Teams: Comparing Cases Promotes Learning and Transfer	The Effectiveness of Hardiness Training	: Effects of multisource *feedback* and a feedback facilitator on the influence behavior of managers toward subordinates.	Does method of acquisition affect the *quality* of expert judgment? A comparison of education with on-the-job learning	Applying Trained Skills *on the* Job: The Importance of the Work Environment	The Use of 360 Degree Feedback Technique in the Evaluation of Management Development	TRAINEE CHARACTERISTICS AND THE OUTCOMES OF OPEN LEARNING
Author	Antonacopoulou, Elena P.	Bailey, Caroline; Fletcher, Clive	Basadur, Min; Runco, Mark A.; Vega, A. Luis	Cope, Jason	Cromwell, Susan E; Kolb, Judith A	Donohoe, Timothy, Johnson, James, Stevens, Joanne.	Enos, Michael D; Kehrhahn, Marijke Thamm; Bell, Alexandra	Hunt, John W; Baruch, Yehuda.	Kinman, Gail; Kinman, Russell	Loewenstein, Jeffrey; Thompson, Leigh; Gentner, Dedre	Maddi, Salvatore R.; Kahn, Stephen; Maddi, Karen L.	Seifert, Charles F; Yukl, Gary; McDonald, Robert A	Summers, Barbara; Williamson, Trevor; Read, Daniel.	Tracey, J. Bruce; Tannenbaum, Scott I.2; Kavanagh, Michael J.2	Tyson, Shaun; Ward, Peter	Warr, Peter, Bunce, David
Year	1999	2002	2000	2003	2004	1997	2003	2003	2001	2003	1998	2003	2004	1995	2004	1995
Publication	International Journal of Training and Development	Journal of Organizational Behavior. Vol 23(7) Nov 2002, 853-867. John Wiley & Sons, US	Journal of creative behavior. V. 34, No. 2, 77-101	Management Learning. Vol 34(4) Dec 2003, 429-450. Sage Publ	Human Resource Development Quarterly. Vol 15(4) Win 2004, 449-471. John Wiley & Sons, US	Employee assistance quarterly. V. 12, No. 3. 25-34. The Haworth Press, Inc.	Human Resource Development Quarterly. Vol 14(4) Win 2003, 369-387. John Wiley & Sons, US	Journal of Management Development. Vol 22(8) 2003, 729 - 752. Emerald, United Kingdom	Journal of Workplace Learning. Vol 13(4) 2001, 132-144. Emerald, United Kingdom	Academy of Management Learning and Education, v2, #2, 119-127.	Consulting Psychology Journal: Practice and Research, vol. 50. No. 2, 78-86	Journal of Applied Psychology. Vol 88(3) Jun 2003, 561-569. American Psychological Assn, US	Journal of Occupational & **Organizational** Psychology. Vol 77(2) Jun 2004, 237-258	Journal of Applied Psychology; Apr95, Vol. 80 Issue 2, p239, 14p	Management Learning. V 35, No. 2. 205-223	Personnel Psychology; 0031-5826, June 1, 1995, Vol. 48, Issue 2
Location Found	Psych Info. Under Sociology	Psych Info. Under Sociology	Psych Info Under Creativity	Psych Info. Under Sociology	Psych Info. Under Sociology	EBSCO Business Source Premier	Psych Info. Under Sociology	Psych Info. Under Sociology	Psych Info. Under Sociology	EBSCO Business Source Premier	EBSCO Business Source Premier	Psych Info. Under Sociology	PsychInfo Under sociology	EBSCO Business Source Premier	Psych Info. Under Management development	EBSCO Business Source Premier
Date	6/12/2005	7/1/2005	8/13/2005	8/11/2005	8/11/2005	7/23/2005	8/12/2005	8/11/2005	6/13/2005	7/23/2005	6/11/2005	8/11/2005	6/13/2005	6/11/2005	8/11/2005	6/12/2005
Sample	Mid-level Managers. 78 Managers across three Retail Banks; randomly selection across 3 banks, broad spread of age, seniority, specialization, gender and backgorund.	Mixed. 104 managers (78.8 male and 19.2 female; 1.9 missing data) from a large private-sector service organization. Partic was mandatory andused for all employees with more than 3 subordinate staff. Target managers were selected at random form the database held by teh external consultancy managing the administration of the 360 degree process. Managers cam from 4 different business areas--commercial service	Mixed. Managers (N=112) from a large international consumer goods manufacturer from finance, manufacturing, operations, employee relations and *distribution.*	Executives. 6 practicing entrepenuers; this aricle focused on a special breed of managers, namely individuals who are embroiled in the ownership and management of a small enterprise. It has been suggested that that study of entreps representa t rich, unique context in whihc to explore the phenomenon of management learning. This is due to	supervisor. Sixty-three front line supervisors from one unit of a large northestern university and their eighteen direct supervisors participated in this study. Sample selected for consistency; all sups in this work unit within the university had completed the supervisory training program within the given time period and at the appropriate time intervals needed to meet the design protocol of this	Supervisor. 89 male and female supervisors with varying degrees of experience, number of subodinates and education. Employed by Federal *contractor and* trained by the EAP coordinator (EAP at this site was internally housed). 19 were dropped due to non partic at the delayed post test measurement period.	Mixed. Mgrs selected (out of pop of 4500) chosen from a range of depts who had participated in both types of learning activities (formal and informal). *Selection* - assumed that any member of pop had engaged in informal learning, so selection focused on sample of 188 who participated in co sponsored leadership training coures offered over the previous 3 years. 45% (84) took part	Executives. Strict selection creiteria with regard to age, experience, seniority and managerial responsibility. 252 chairs, chief executives, heads of functio and divisional or reaional managers, from 48 different organization, particiated in 14 interpersonal skills programs, conducted in London, over a four year period (1993-1997). Of partics 84% were male; 67% were employed by large global firms (telecommunicat ions, banking, oil, chemicals);	Mixed. 18 senior and middle managers (16 males) with an avg length of service of 22 yrs. They were drawn from across the functional areas o fthe company, although production predominated. Most had no formal qualifications, and almost all have risen throughthe ranks--often from engineering and technical backgrounds. Results from learning styles inventory indicate the roup was predominatntly "achievement" oriented to	Mixed. 270 middle level sales managers and masters of management (MBA) students. An additional 1,110 MBA students and middle level *sales* managers served to establish baseline performance.	Mixed. Managers in a utilities company. With co's permission, itemwas place din its newsletter announcing stress management courses available to managers on a voluntary basis. After a 3-week response period, 54 of the pool of 64 volunteers were assigned at random to nine groups with the restriction that gropus be balaned as to management level and gender. Some participant attrition occurred both	Mid-level. (14) managers from a regional savings bank in the northeastern Univresed States. Included 6 men and 8 women. The managers were randomly assigned to the experimental and control groups with an *equal* number in each group. The sample for the comparison group included 7 med level managers (5 women and 2 men) in another regional savings bank who volutneered to participate in the study.	Mid-level. Four focus groups: Credit Managers who were currently workign commercially; lecturers in finance and acounting; students of finance and accounting; and laypeople who had no experience or triaing *in eithe rfinance* or credit management. Approximatly 20 participants from each group were recruited (19 lecturers, 21 managers, 21 studetns, and 21 lay people). As a performance incentive, each group was offered a rpzie of L50 to the eprson (in that group) who made the most correct failure predictions. The credit managers were all either attendees at a major	Mixed. Study conducted in a private org that owns and operates 77 superarkets in four northeastern states. Employs, on avg, 10 managers per stor. One store manager, one asst manager and *remaning* managers directly supervisr various depts (deli, produce, etc.). Over a 5-month period, approx 200 dept mgrs were scheduled to attend a supervisory skills training program. 159 dept managers attended. These trainees were all potential partics in this study. Criteria to be included:	Mixed. Initial target population for the changea ctivity was the top 254 senior managers (known as Impact I). 217 remained through 1999. Two years laterthis group was followed by 300 members of middle management (known as Impact II). 500 managers in a large UK public authority.	Jr. Managers. 106 junior managers; 93% male from a single British organization within different depts.; 4 geographically separate colleges, but mainly worked *on their own* with materials provided. Trainee age was recorded in years. Mean value was 36.08 years (SD 8.38). 24% of sampel were aged under 30 years; 35% were between 30 and 39 years; 32% were betwen 40 and 49 years; and 9% were ged 50 years or above. Ed quals - 46%

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DIAD	3 = Stratified Purposeful sample 5 = No	3 = Purposeful Random 5 = Pattern Matching is evident.	3 = Criterion 5 = No.	3=Criterion 5=Pattern matching; data reported indicating variations in settings or field experiences.	3= Criterion 5= Sample data included demographic data.	3= Criterion 5= No	3= Criterion 5= Sample data included demographic data.	3= Criterion 5= Sample data included demographic data.	3= Criterion 5= NO	3= Doesn't say. 5=Pattern matching - findings can be matched to other published conceptual frameworks.	3= Purposeful random sampling 5= gender and managerial level only.	3= Purposeful Random 5= Just gender	3= combination or mixed purposeful sample 5= Just experience, education/training	3= Criterion 5= Sample data included demographic data.	3= Criterion 5= No	3 = Criterion 5 = Sample data included demographic data.
Variables	Perceptions of role, significance and impact of training as a learning opportunity. Foucs of the study is the way individual managers learn and adapt during periods of change and the contriubtion of org sysems (such as training and dev) to these processes. Association between trng and lrng with the inidvidual manager as the unit of analysis. Individual manager as teh unit of analysis.	Sample provided self assess at two time poitns during the course of the annual (mandatory) admin of a developmental feedback program. All 50 items comprising the feedback questionnaire were included in analyses; the items corresponded to four competency dimensions which questionsed respondents abou thte interpersonal behaviros' of target managers. for eachitem, raters had to rate the target's	Inter-relationahip between 6 attitudinal and behavioral skill variables learned during training were measured to improve understanding of how these variables contribute to the process. Behavioral skill in generating quantity of options was the most important variable overall: it was directly associated with behavioral skill in both generating quality options and evaluating options. The key attitudnal skill and the scond most imporant variable overall	The importance of 'learning events' has become an emergent theme within theorizing on how entrepreneurs learn. understanding of the learning outcomes triggered by significant, discontinuous events during the entrepreneuri al process. It suggests that the domain of entrepreneurs hip represents a special and unique context in which to study	supervisory skills training	Study provides support for small group interaction as well as corrective feedback strategies as a specific methodology when trining mangers and supervisors in eAP practices.	examined how the extent to which managers engaged in informal learning, perceptions of support in the transfer environment, and level of managerial proficiency related to transfer of learning in twenty core managerial skills. Research Qs - To what extent and in what ways did manager learn core managerial skills through formal training and informal learning? Q2 Waht is the relationship of	Interpersonal Skills Training. Hypotheses: impact of interpersonal skills training on subsequent skill performance will iprove the effectivenss of those skills; H2 Impact of interpersonal skills training on subsequent skill performance will be positive but modest; H3 Impact of interpersonal skills training on subsequent skill performance will very across different skills.	Examine relationships between inhouse delivery of a degree program for managers using workbased learning, motivational orientations to learn, learning styles and the eventual learning outcomes.	Our primary measure was whether negotiating groups formed contingency contracts.We predicted that drawing comparisons should increase the likelihood that partics would successfully transfer the contingent contract schema from the cases to the negotiation. A condary measure was whether contingent contracts that were formed created greater joint expected value than other contracts.	Same composite questionnaire was used at pretest and posttest. It included measures of personality hardiness, job satisfaction, subjectively expereinced strain, perceived social support and illness. The personal views survey was used to measure hardiness. This test consiste of 45 rating scale items worded to refer to beliefs abou toneself or the world that conern sense of commitment, control, or challenge. On	Meaures of influence behavior: Used an updated version of Influence Behavior Questionnaire (Yukl & Tracey, 1992). 11 influence tactics in the updtaed target version of the questionnaire. Each item had five anchored response choices indicateing how frequently the focal manager used the tactic in influence attemtps with the target person. (1-5). Feedback was based on the 11 tactic scales. Evaluation fo the feedback interventiosn was based primarily on the composite score of the core tactics, but supplementary	Expert judgment; tasks are are learnable--meaingin improvalbe in repsonse to feedback on past performance. RQ - does the way that professional skills are acquired influence the level of expertise developed? In other words, is it better to learn from a book or form experience?	Meaures: learning. Assessed from scores on identical pre andposttraining supervisory knowledge tests. The tests contained six short answer items which were derived from our content analysis of the training materials and then subjected to review by the trainers to ensure content validity. Ex. Describe three barriers tothe communiction process. the score for ea item ranged from 2-5 oints, depending on the importantce and relative tiem spent on the corresponding	Examines 360 degree feedback as both an intervention and an evaluation technicque for assessing managerment learning.	over a 7-month period, the impact of 11 trainee characteristics was investigated in relation to immediate learning scores, reactions to the program, and changes in rated job behaviors. Time 1 and 2 questionnaires were completed by attendees; learning scores were provided by tutors; line managers' performance ratings times 1, 2, and 3. Prior to program, time 2 = immeditately after the trianing, approx 4 months later; then time 3 at 3 months later.

MD Intervention	General Managment Development. Managment DevelopmentSystem. No specific intervention. See method for outline. Focus was on Management Development Systems within respective banks; main influcences on mgmt trainign ad devt in the org.; the perceived association between learning and trianing and the elvel of utilizatio fo learning from training.	Multi source / Multi Rater Feedback program (MSMR). Changes in management competence over time, through a longitudinal study of MSMR ratings provided at two time points in a two year period, for a group of middle to senior managers.	General management development. Creativity. 20 hours of intensive training in the Simplex creative process over 2 days; creative thinkign to solve real management problesm. Hands on and experiential, with exercises and diverse tasks that encouraged discovery of concepts such as value of ideastion-evaluation. Using chosen real wordl problesm, partis practiees ideation-evalatuion.One goal of training was to encourage	Informal. Discontinuous Learning. Learning and personal develoment experienced by entrepreneurs within the conext of small buseinss ownership and growth. Exploration of discontinuous learning events. It goes on to explore the concept of critical reflection and suggests that these learning outcomes are the result of what can be described	General Supervisory Training. Peer Support Network (Transfer mechanism). examine the relationship between four specific work-environment factors (organization support, supervisor support, peer support, and participation in a peer support network) and transfer of training at one-month, six-month, and one year points; Quantitative and qualitative data were collected from both trainees	General Supevisor Training. EAP. 9 traiing session 3 hours duration; Training used informal round table discussion style; film--assess behavior, then discuss in large group. Refer to handbook which contined list of job performance criteria, then re-assess and discuss with group. Comparisons were made between assessment to demonstrate the value of using evaluation criteria (vs.	Informal learning. Comparison between informal and formal managerial learning approaches.	Interpersonal. Interpersonal Competency. Purpose is to assess the impact of interpersonal competenceis training on the subsequent performance of senior executives. The program under study is a concentrated five days, T & D workshop for top level managers, drawn from very different backgrounds, countries and industries. Its stated objectives are to improve the perceived interpersonal skills of the participants.	Work-based learning. In collaboration with the training dept of the UK subsidiary of a major motor manuactuer, Luton Business School has deeloped an undergraduate business degree for employees based at one of the ocmpany's UK plants.A principle reason for implemenation of the program was to help evolve a culture of life long learning. The program is delivered predominatlntly in house and incorporates accreditation of prior experiential	Analogical Learning. Two phases: Training and face to face negotiation. During training, we gave partics two training cases to read in a packet entitled Negotiation amr up Analysis. Partics were given approximately 20 minutes to read and discuss the cases with ehtir randomly assigned teammate. In the separate cases condition, teams were instructed to analysze each case	Resiliency. Hardiness training condiction was compared with a relaxation/medit ation condition and a placebo/social support control. The process of training for this experiment involved written manuals, tape recordings, and the amount of supervised expereince with pilot participnts deemed necessary for mastery. Hardiness training condition involved four parts. Intro part (2 sessions), partic's described their	MSMR. compared a feedback workshop with both a no-feedback control group and a comparison group of managers who received a feedback report but no feedback workshop. A letter from the bank president was sent to all participants and raters, along with cnosent forms to be returned directly to the resarcerhs. The premesaure questiannaire was mailed directly to the participants. A similar procedure was followed in teh second bank to obtain volunteers for the feedback only condition. The multisource raters used the	General Management Development. Decision Making / Expertise: Asked partics to make three main types of judgements relevant to credit management. First, partics were asked whether they thought th ecompany would fail. Second, asked for an assessment of the likelihood of late payment. Finally, asked partics whether they would grant credit to each company.	General Supervisory training. Basic supervisory behaviors and skills training. Voluntary. Program consisted of 3 days of traiing in an offsite facilitat operated by the orgs training dept. Training focused on interpersonal skills, and various admin procedures: shift scheuling, action planning, and purchasing. Multiple training methods were used throughout the course, inlcuding lecture, discussion and demonstration, role plays, and audiovisual techniques to facilitate both	MSMR. Major plank in the HR strategy of the local authority entiled, "Impact," it was aimed at changing the leadership sytle, relationships, behavirous and working practices of the entire management team. Emphasis was on OD through sustainable personal development, so there were policy supports such as planning and coaching systems. Concepts such as	Informal Learning. Self Directed. Open Learning Systems (individuals work on their own to learn material that is presented either in written form, through a computer, in audio or videotapes or by an interactive video system). Increasingly part of management development and skill maintenance programs. Key feature is that learners have more autonomy to decide what is studeid as well as how, when, where and at what pace.
DIAD	1 = Thick description of "network" of literature associated with phenomenon/intervention.	1 = Thick description of "network" of literature associated with phenomenon/intervention.	1= Adequately (but not thoroughly) described.	1= Adequately thick description	1= Thick desription of intervention.	1 = Intevention was adequately described.	1 = Description of network of literature associated with the phenomenon.	1= Thick desription of network of literature associated with intervention.	1=Thick description of network of literature associated with intervention.	1=Intervention was adequately described; embedded in a network of findings of previous stuides.	1= Adequate description of intervention.	1= Adequate to get a feel for the intervention.	1=Intervention was adequately described; embedded in a network of findings of previous stuides.	1= The intervention under study was adequately described.	1 = Intervention was adequately embedded in a network of theoretical concepts/findings of previsous studies.	1=Intervention was adequately described and embedded in the literature.

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Method	Qualitative. Case Study; longitudinal; 3 years to complete (1991-1994). Qualitaitve interview (semi structured; observation, questionnaires and critical incident technique were supplementary. Interviews covered perceptions of current training system; main influences on mangement training in the org; perceived role of trianing to individuals development, perceived association between learning and training and the level of utilization of learning from training. Org perseptive was obtained through	Quantitative. Quasi-Experimental. Ratings of 104 target managers (by self assessments, bosses-, first- and second-level subordinates) were investigated within the context of a developmental feedback programme in operation within an organization. compared ratings over 2 administrations (with 2 yrs between administrations)	Quantative. Quasi Experimental. Field experiment to measure interrelationshps among variables that include six attitudinal and behaviroal skills leanred during training. Predicted relationships were tested adn a best-fit causal model was developed. Before and after traiing, particpants were measured on the variables. Multivariate analysis of variance was used to ensure that a normal "take" ha occurred consistent with previous	Qualitative. Case Study--research into the lived experience of 6 practising entrepreneurs. focus was learning and personal development experienced within the context of small business ownership and growth.; indepth, unstructrued phenomenological interviews were conducted with the six participatns, which explored developmental history of	Mixed methods study. Trainees completed a five part questionnaire that asked for self report data on the transfer of key skills emphasized in the supervisory training program an the degree of org, direct supervisor, andpeer support, as well as the level of partic in a peer support netowrk, experienced by trainees. Short answer questions on thes same topics were inlcuded in teh questionnaire.	Quantitative. Quasi experimental. Repeated measures design. Pre, post, and delayed post at six months format was used to measure retention of information provided by the training.	Mixed. Quant - Descriptive / Corr. One-group descriptive survey approach to answer the research questions. All data were collected using a single self report questionnaire. Explored how variables of interest were related for a purposefully selected group of manager with data collected from self-report questionnaire. Proficiency measure - rated extent of their	Quantitative. Quasi. A comprehensive and robust system of assessment was used to overcoem the deficienceis noted in tehliteraure regarding the assessment of how the competencies should be developed--assessing the impact of the training on interpersonal skills. It was based on a longitudinal, before and after assessment of each partic skills by his or her direct reports. It was suggested tath upward	Qualitative. Case Study. Semi structred interviews were conducted with partics and lecturing staff. Inteview data were content analyzed using a method of categorzing and coding responses. Learning styles were assess by Approaches to Studying Inventory.	Quantitative. Qu	Quantitative. Experiment. used three trainers and three treatment conditions. Traiing took place in small groups of 6 trainees with one trainer. Over the course of the study, each of the three trainers employed all of the treatment conditions, such that there were three groups per treatment. A battery of questionanires was adminstered at pretest (no more than 1 week before traiing began) and again at postest (no	Quantitative. Experimental. Field experiment included an experimental group and a control group in the same org. There was also a quasi-experimental comparison group in another org. Managers in the experimental condition received a feedback report in a owrkshop with a facilitator. Mangers in the compaarison group received the same type of feedback report, but no workshop. Manaers int he control group received no feedback, but after the study was completed they also had an opportunity to particpate in a	Quantitative. Quasi Experimental. In this study, compare judgmental expertise developed through education versus expereince on the outcomes--credit management decisiosn made by four groups of participatns who varied in their degree of expereince in credit manaeetn and in their education in finance and accounting. Control group--laypeople. Decisions made fell into the first two functional responsibilities of credit maangers: assessing credit risk and granting credit. Credit risk assessment tasks are particularly suitable for this type of study int hat they have a high degree of context independence, meaning the outcome	Quantitative. Quasi experimental. Three weeks prior to training a measure of supervisory behaviors was collected from the trainee and their supervisor. This measure, developed from the specific objectives outlined in the training materials and intervews with the trainers, was used as a baseline to account for behaviors that had been demonstrated by trainees before trainnig. Next, managers attended the trainnig. Learning was assessed by	Quantiative. Quasi experimental. Evaluation model created to distinguish the effects of different interventions for different stakeholders. Conducted over three years ina large UK public authority. Principles of evaluation that were adopted were based on Hesseling (1966) and Kirkpatrick (1994). Based on limitations of Kirkpatricks model (outlined in paper), three levels were	Quantitative. Quasi Experimental / Correlational. Examination of the litature indicated that previous measures of these constructs were very specific to the traiing investigated in each study--therefore necessary to create new scales for use in this situation. Two scales were devised to assess distal and proximal forms of pre-training motivation. 1. general attitude to training (5 items; alpha = .91; 2. specific
DIAD	7 = Limited transparency. 8 = No.	7 = Limited transparency. 8 = Minimal description except resutls (results are quantiatively described)	7= Effect Size 8= Moderate completness in reporting	7 = Analysis procedures are clearly identified and included narrative examples from interviews. 8 = Yes; methods, analytical strategies and results outlined.	7= Open coding of short answer responses and categorized 8= Evidence presented regard methods, analytical strategies and results.	7 = Effect Size 8=Limited in terms of completeness of reporting - methods described, but decision, analyitcal strategies were not outlined.	7= Data analysis procedures clearly identified and reported. Effect size can be deduced from means and Std Devs 8= Audit trails - limited.	7 = Effect Size 8 = moderate audit trails regarding methods analytical strategies and results.	7 = Deductive coding from literature. 8 = No	7= Effect Size 8=Discussion of results.	7= Effect Size 8= Audit trail provided in terms of results.	7= Effect Size 8= Adequate to get a sense of analysis decisions	7= Effect Size 8=Audit trails provided with regard to analysis and results	7= Effect Size 8= Reporting was complete; audit trail.	7 = Effect Size 8 = No - list of all measures and results, but no trail regarding decisions, analytical strateiges and results.	7= Effect Size 8= Adequate audit trails provided in terms of methods and results.

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Outcomes	Shows the multiplicity of factors affecting whether individuals actually learn form training. Findings challenge some of the assumptions that have guided our htinking in management *training and devt* field. Managers perceived learning to result from four main sources: experience, trianing, modeling others in the wrokplace, and coaching. Learning approach was consistent across the banks--through absorbing information by making it relevant to	Overall there was mixed evidence for the benefits hypod to follow partics in MSMR feedback. On avg, competence waasperceived to increase by all raters (self, bosses, first and second level *subords); this* increase was found to be significant for three out of the four rater constituencies (targe managers and both levels of subord staff). Develop needs were also perceived to decrease by target managers, firsta dn second level subords (a	No significant differences between mean task set scores on any of the ideational or evaluational skills measures; either pre test or post test. Trainng produced the intended results for all but evaluation of non original solution ideas. Quantity of ideas produced increased isgnificantly from a mean of 9.1 to a mena of 13.4 ideas ($p < .001$). Also a significnat increase in the quality of ideas produced froma mean of 3.1 to a mena of 5.4 original ideas	illustrates that these discontinuous events have the capacity to stimulate distinctive forms of 'higher-level' learning--learning that is fundamental to the entrepreneur in both personal and business terms. Discreet and unusual events can often be transformatio nal in the sense that when individauls face such non routine	Showed that trainees who reported receiving high levels of organization, supervisor, and peer support, and who also participated in a peer support network, reported higher *levels of* transfer of knowledge and skills. When data were segregated and examined according to length of time since trainees had completed training, findings were still significant for organization,	Post test scores were significantly greater than at pretest and delayed post test; delayed post test scores were still significantly greater than at pretest. Results from a between-group one way analysis of variance (ANOVA) yielded significant differences $f(2,138) = 196,84$, $p<.001$ (see table 2 p. 30).Using Tukey's post hoc comparison, it was found that the post test scores were	Results suggested that informal learning is predominantly a social process and that managers with high levels of proficiency who experience low levels of coworker, supervisor, and organizational support learn managerial skills mostly from informal learning and transfer learning more frequently. Interactiosn with others (44%) was the most prevalaent learning actiity named. Research Q1 -	results indicate significant impact on some, but not all, of the competencies and skills under study. Across all groups, 68 significnat changes were identified. No cohort failed to improve its mean on at least some questions. Overall, the training proved to be effective--findings support H1. Findings support H2, the impact of interpersonal training has been modest. Refinement, rather than radical change is possible. H3 - supported; the	This paper examines the possibility that the main motivational factors for manager participants to undertake and complete one such programme are not necessarily conducive to the most effective forms of learning. It reviews some of the literature focusing upon the motivation and learning styles of mature students, and uses this as a basis for examination of data from questionnaires and semi-	Analogy training led to better performance than separate cases or no training. Teams that compared cases (n=24/60 = 40%) were more likely to form a contingent contract in the actual, face to face negotiation than were those who analyzed the cases separately (n=8/27 = 22%) a marginal association, $X2 (n=97,1) = 3.50$, $p = .06$. Comparison training, but not separate case	Hardiness training condition was more effective than the other 2 conditions in increasing self-reported hardiness, job satisfaction and social support while decreasing self-reported strain an dillness severity. Although partics were assigned to treatment conditions at random, pretreatment scores on the dependent variables of this study showed some variation across conditions (see Tables 1 & 5--pg. 83). these pretreatment	Managers in the feedback workshop increased their use of some core influence tactics with subordinates, whereas there was no change in behavior for the control group or for the comparison group. The feedback was perceived to be more useful by managers who received it in a workshop with a facilitator than by managers who received only a printed feedback report. Feedback Wroshop Evaluation: The mean scale score *for the quality of* workhop content was 4.3 for the first	Lecturers had the highest mean number of correct corporate failure predictions, closely followed by students, with managers and laypeople doing womewhat less well. Analysis revealed taht both lecturers and students were able to predict corporate failure more accurately then laypeople ($t(78)=2.6$, $p<.01$; $t(78)=2.1$, $p<.05$). Moreover, there was a nonsignificant trend suggesting that lecturers outperformed managers ($t(78)=1.7$, $p<.1$). There was no difference between managers and laypeople. *Lecturers and students* generally outperformed	Knowledge: Mean pretrain scores for all was 9.71 (std 4.12). Mean posttrain scores for all was 16.63 (std 2.82). A t test showed a signif diff betweenpre and posttraining knowledge ($t(103) = 28.86$, $p<.01$, indicating that the trainees knew moreabout the basic supvry skills and behaviors at the end of training then before training. The internal consistency est (Cronbach's alpha) was .80 for pretraiing knoweldge and .71for posttraining *knoweldge.* Preand posttrain beahviors--to	The evaluations for Impact I and II (which occurred 18 months later) each took 12 months to complete. The eval reported covers a period of approx three and a half years--from 1997-2001. See Table 1 on p 213 for outcome measures for each stakeholder and ea level. Sr mgrs showed first round results for each competency using a t-test a significant	learning score was significantly independently predicted by general training attitude, the use of an analytic learning strategy, and (low) age. Post-training reactions were identified as being of three kinds: reported enjoyment, usefulness, and difficulty. These were shown to be differentially associated with the trainee characteristics studied. Significant associations were found *between learning* score and changes in rated
DIAD	2 = Moderately Thick description of findings and associated concpetual theories. 6 = Not really. only subgroups reviewed were fast-trackers compared to non-fast trackers.	2 = Thick description of findings and associated theory. 6 = No.	2=Findings were adequately described in terms of related literature. 6=No	2=Findings were described in terms of realted literature. 6=No	2= Finds described in terms of related literature. 6= limited - between supevisors and trainees perceptions	2= Findings were adequately described in terms of related literature. 6= No	2=Findings were adequately described in terms of literature. 6=No testing within subgroups	2=Findings were adequately described in terms of literature. 6= No	2=Thick description of findings assocaited to theoretical framework. 6=No	2= Results described in terms of related literature. 6=No	2=Outcomes were adequately described in terms of related literature. 6= No	2= Findings were adequately described in terms of related literature. 6= No	2=Adequately described in terms of literature. 6=No	2= Findings were adequately described in terms of related literature. 6= No	2= Findings were described in terms of literature. 6=No	2= Findings were described in terms of related literature. 6= No
Effect Size (if quantitiative)	N/A	medium to large effect sizes	Low to moderate	N/A	Low to moderat	High	High	Low	N/A	moderate	Moderate to large across measures	Ranged from moderate to large for all analyses.	medium to large effect sizes	Low to moderate across measures	small to mediu	Moderate to large across measures

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Setting	Financial services sector; UK; 3 banks which have been udnergoing numerous operational and strategic changes over the last few years. One of the most significant changes however, has been the cultural shift from being operatioal to becoming more sales oriented. This shift has been reflected in the redesign of the banks' premises and in paricular the branch network, the technology for delivering services. these changes ahve also been a major driver across teh three banks prompting a recondiseratio fo th etraining and development	UK - large privat	Large Intl Consumer Goods Manufacturer	6 small businesses	The work unit where the supervisors and mangers reside is responsible for the stewardship of the university's physical plant. The seventy-five sups in this unit are preimarily front line sups andtheir direct reports are largely front line employees. The 25 managers int he unit are the direct supervisors of the front line supervisors. Union environemtn Impact of union constraints and union contract	Federal facility in a rural area. Company employes approx 450 individuals who are engaged in various technical, admin, and prof services.EAP at this stie was internally housed, has been operative for over 6 years, and has previously conducted several supervisory training evolutions.	Managers who work at a large subsidiary of a hundred-year-old Fortune 100 company located in New England. Co is a leading provider of insurance products that employed approx twenty thousand employees, was experiencing rapid growth, deep change, and extensive mergers. Co offered wide variety of formal training programs for managers cented on devg proficiency in identified core management behaviors, and	London.	UK plant of a major motor manufacturer. The staff consider the org to be highly bureaucratic. The authors note literature that indicates managers in bureaucracies to be risk-averse, deeply concnered with timmediate problems, and likely to rely on past solutions when solving new problems. The org also has elemtns of a storng and pervsive "owe" culture, and an "acievement " orientation. Manager who work in these envrionemtns tend to be	Carried out in actual management training courses with participations who were highly motivated to learn.	Does not say.	Setting for feedback workshop: conducted overa 7 hour period at the bank's training facility, and the researchers were the facilitators for the workshop.	Participants assumed the role of credit manager and made creditworthiness predictions and credit granting decisions for six companies with known performance.	Offsite facility used by orgs training dept.	UK - local gove	Held at Universities; formal group sessions; then rquired to study on their own at their work locations or at home.
tment Characteris	models of mgmt traiing and development with systematic approach to delivery of job specific knowledge and skills; conditions for effective learning	Each manager received their ratings in a written feedback report; this detailed individual ratings for items for the self and the supervisors assessment, and raing aggregates for first and second level subordinates ratings.	3 phase process: finding and defining their ownproblems, solving those problems and preparing to implement their own solutions. Various tools and techniques of ideation and evalaution were prctied in each of 8 stesp and three phasese of the porcess. As a procedureal check, partic's gains after training were checked against previsou research, using multivariate analysis fo variance. This was done to ensure that a normal "take" had occurred consistent with	Exploration of critical incidents was integral part of the interview porcess, primarily because these discontinuous events were perceived as a way in to studyingthe complex and dynamic phenomenon of entrepreneuri al learning. Interviews focused on 'memorable' moments from a number of diff persepctives--the antecedents of the event;	Twenty three topic areas were the absis for the core modules of the training program. Each focused on a specific management skill (see development controls on p. 458). Group Projects: Supervisors in the training each participated in a small group projet durnig th eprogram. This project is intended to provide an opportunityt o apply skills or competenceis addressed int eh program while	All nine training sessions were apporx 3 hours duration and were limtied to 8-12 partics per sission. Each participating supervisor received one trining session. The training protocol consisted of 23 items ranging in tent from a) assessment of the attidues and generl knoweldge concering th nature of alcoholism/dru g addiction, b) the legal/ethical/hu mane reasons for making a referral, c) personal awareness items, and d)	Informal learning - on the job. From literature review - informal learning occurs int eh presence of both action and reflection (Watkins and Marsick, 1992) and includes self directed learning, networking, coaching, mentoring, performance planning, and trial and error.	18 senior executives per five day session. Designed to give partics multiple sources of feedback. Verbal feedback wold come from other participants on the program, three full time tutors and program director. This verbal feedback was to be linked, through the tutors, to the survey feedback from direct reports to check th eface validity of the survey results. Group and/or individual feedback has beenshown in	Delivered predominatnly inhouse, and incrporates accreditation of prior experiential learning, structured, negotiated work-based learning, and formally taught components, using a "mixed-mode deliverty model (as recoomended by prior study).	The cases were approx 225 word descriptions of negotiation situations involving a conflict between individuals. The cases provide dconcreete detals and context information and outlined a clear and elegant solution to the conflict; namely, the deplyment of a contingency contract. Partics were given approx 20 miutes to read and disucss the cases with their teammates.	Haridness training condiction involved 4 parts;1) partics described their current stressful circumstances, and the trainer presented a model that highlighted coping and clarified the purpose of the various classessions. In the next foru sessions, particis practiced the three techniques for tranfromational coping. Situational reconstruction stretches the imagination to facilitiate a broader perspective on	In each condition, we randomly selected five peers and five subordinates of each manager to serve as raters. If a manager had fewer than five subordinates or peers, all of them were included. In most cases the managers had only one boss to provide feedback. In the bank used for the experimental and control conditions, the response rate on the premeasure survey was 80% for subordinates, 85%, 85% for peers, and 100% for bosses. The response rate for the coparison group in the other bankd was 96%,subords., 91% peers, and 100%	In an attempt to maximize, as much as possible,the degree to which the judgment tasks were ecologically valid, the task was one that falls within the normal domain of the participant's activty. For a credit manager, this means making judgments of such things as failure likelihood and credit worthiness, adn the offering of trade credit terms. Procedures: participants made credit related decisions fo rthe six companies based on extensive accuntaing and payment behavior data. Credit managers would have recognized all the infromation, but not all of it is included in	15 trinees per class, with 10 classes conducted voer a 5 month period. Learning was assessed by using pre andposttraining supervisory knowledge measures.	360 feedback reports - before and after; participants, peers, boss, subordinates, and customer (internal/exter nal) providing detailed feedback on competencels. Surveys to participants asking for responses on process, content and objectives achieved for all interventions. Surveys to managers of partics--comment on observable changes in performance, behavior, attitudes, and	Procedure: Prior to the program (at time 1) trainees were asekd to complete a questionnaire and mailthat to the researchers university address. Questionnaire contained items which tapped the individual characteristics examined (see method). At the same time, trainees line manager were asked to rate the job performance of each trainee (through a separate mailed questionnaire) in terms of 15 criteria identified through job

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DIAD	4 = Design, purpose and data collection indicate coherence.	4 = Evidence presented of triangulation of sources; purpose, data collection indicate coherence.	4=Minimal - two procedural checks.	4=The design, purpose, data collection strategies indicate coherence.	4= Minimum: Controls put in procedures (each module was delivered by same instructor at each iteration of the program; content and format checks of materials)	4=Design, purpose and data collection strategies indicated coherence.	4=only content validity of measures (they were preestablished)	4= Triangulation; contended that upward survey feedback does not suffer from before/after respondent bias if it is purely developmental and not part of an internal appraisal process (bias for leniency or for harshness).	4=Negative case analysis to a small degree	4= Team report content coded by blind raters; As a manipulation check to ensure theat comparison groups were drwawing comparisons and separate cses grops were not, we coded whether partics made reference to the first study cse when dicsussing the second.	4=As a means of ensuring that the three treatment conditions were experientially different, two psychology graudeate students who were familiar with the specific of these approaches to raiing but were unaware fo the present hypotheses judged samples of the audiotaped sessions. Specifically, they were given tape recordings and theylistened as long as necessar to reach certainty as to which treatment condition they	4=Measures used to establish credibility - mean ratings of feedback accuracy, relevance, and utility by managers in the two feedback owrkshops and comparison group were analyzed and presented.	4=A common context with regard to matters likely to influence the decision was provided. Also, the domain is unusual in that educatio and experience are largely seperated. Coherence in design, purpose, and data collection strategies.	4= Triangulation was employed; t-tests conducted to determine pre and post training knowledge estimates (significant); internal consistency estimates (alphas) provided; to aovid self rating bias, and to decrease common sources variance, only supervisor rating of the trainees supervisory behaviors were used. However, a control group was not used therefore differences pre and post behaviors cannot conclusively be attributed to the training.	4=Measures used to establish credibility - Peer examination.o utcomes realized for each interention (360 feddback, leadership, coaching, learning exchange and self devt guide). Used a steering group to derive outcomes and measures; worked in paris and checked results with the rest of the group.	4=
heory / Framewor	Org Learning and Se	theory of self image formation (self perception perspective) may provide explanation of findings. Suggests an individs self image is largely drawn from introspective observations of one's own behavior (ie others' opinions are not incorporated) thus supporting the finding that a target's self ass at time 1 is the best predictor of their self assess at time 2. However, they state that an individ will modify their own self image if (a) they	Brainstorming. 4 P causal model (Product, Person, Press (Environment), Process. Outcomes support Osborns Theory on brainstorming. During prob solving phase of complete process of creativity, an attitude of preference for active divergence is triggered by an attitude of preference for avoiding premature evaluatoin of options as premature eval of options. However, the latter attitude--acceptance of the value of	Mezirow's transformativ e learning; Double loop learning. Theories of higher-level and lower-level learning; experiential learning; entrepenuerial learning; Double loop and transformativ e learning are both a higher order learning theory, and yet remain qualitatively different. Interpreting these conceptual frameworks in relation to this research, it appears that double loop	For this study, the focus is the work-environment factor "support" identified in Baldwin and Ford's (1988) conceptual model. We examine organizationl, supervisory, and peer support, and explore the use of a peer support entwork, as factors that influence transfer of training. For the latter two factors, we also draw on team member exchange theory (Seers, 1989; Seers,	Only literature. cited regarding benefits and value of supervisor training, and the crucial role it has played relative to the effective EAP sueprvisroy referral relationship. For example, supervirosry perception of EAP effectiveness was the best predictor of referras. Also, factors of a decline in job performance along with a worksite "triggering event" tend to indluence supervisory referral rates.	Informal Learning (Watkins and marsick's Theory--1992); Social practice theory; Learning transfer theory	Argyris' Interpersonal Style Theory mentioned and the interpersonal circumplex (leary, 1957 and Orford, 1994) whose proponents argue that all interpersonal exchanges can be described around two orthogonal axes: dominance/su bmissivemens s and hostility/friendli ness. the model has not been rigorously tested; Managerial Competency Theory (Mintzberg and	Motivation Theory. Motivational theory wil be used to argue that the main factors driving partic mgrs to learn might not necessarily be conducive to themost effective outcomes: indeed they mght actually discourage the dev of flexibility and independence of thougth and practice that are required to develop and sustain a learning org. More broadly, it is also maintained here that a strong and perasive org cuture will significantly	Analogical learning--based on theoretical resrach in cognitive psychology. Analogy is recoegnize das both a sources of new ideas and a means for communicating new ideas, thus, analogy is tightly bound to learning. Analogical encoding stresses that drawing analogies during learning leades to understanding the cases differnetly (i.e. with respect to what they ahve in common) than if those cases were	only literature. Research that has identified mechanisms whereby hardiness may preserve health and enhance performance. Relevant findings include the tendency of hardiness to a) promote the ivew of life changes as less stressful, b) elicit more effective coping efforts, c) produce a more vigorous immune resposne and d) result in increased conscientiousne ss in terms of sound health practices.	Control Theory (Carvery & Scheier, 1981) - one may be more motivated to change one's behavior when ratings from others are lwoer than self ratings. However, negative feedback may be discounted if the rater is perceived as being biased or uninformed. When feedback from multiple sources is consisteth, it is more likley to be perceived as accruagte and useful for guiding beahvior change.	Only literature. No theory. Stdy of expert performance drawn on two contrasting perspectives: those of cognitive science and behaviroral decisison research. Cog science approach focuses on the differentces in how experts and novices approach problems. The underlying message of the cog science approach is that experts structure and represent problems significantly differently than do novices. In contrast, priary focus of behaviroal decision research is on the performance of experts relative to novices or to statistical models.	Theoretical framework tested by considering factors outside the formal training context--influence of the work enviornment on transfer of training. Specifically, organizational climate and continuous learning culture. Org climate is conceptualized as individual perceptions about the salient characteristics (policies, reward systems, managerial behaviors)of the org context; based on interaction between observable,	Evaluative inquiry (a means to action learning through evaluationa nd chane) for Organizational Learning and change is grounded in a social constructivist theory of learning which suggests that learning takes place through a) the collective creation of meaning, b) action c) development of new knowledge, d) and improvement in systemic processes, and e)	Individual - trainee characteristics. No specific theory used to frame the study. However, social cog theory and other constructs are used to frame the study. Specifically, differences between settings of closed and open learning and the use of a behavioral (rather than analytic) learning strategy. This possibility is developed in the next section. More generally, there is a need for more research into variations between people

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Article ID	14D	5D	28D	19D	30D	9D	7D	8D	24D	31D	27D	3D	17D	26D	4D
Article Title	An inquiry into the effect of a management program on perceived locus of control orientation and job satisfaction in managers and non-managers	Evaluation of a management development behavior modeling training program in industry: Transfer of training	Transitions in organizational learning processes: A case study in the perspectives of mid-level managers	Deep learning: A case-study exploration of current practices and organizational supports that encourage this mode of learning in leaders	Learning to change: Organizational learning and knowledge transfer.	Predicting participant activity in a development program: The roles of personality and performance	The effect of training managers to gain employee trust on employee work related attitudes and emotional well-being	The comparison of the effectiveness of two training methodologies in the development of management soft skills	The effectiveness of experiential education in executive development	A Case Study of a Large Scale Intervention viewed through the lens of organizational learning and chaos/complexity	An evaluation of the effectiveness of a formal mentoring program for managers, and the determinants of protege satisfaction	Relationships between interpersonal communication competence and learning in management development training with an experiential learning approach	Action e-learning: The impact of action learning on the effectiveness of a management-level Web-based instruction course	An experimental study of the effectiveness of traditional and adjunct management training for entry level managers at a national aerospace research laboratory	Management development and its relationship to organizational performance: A new approach to evaluation
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Date	7/31/2005	6/30/2005	7/24/2005	8/1/2005	7/13/2005	6/13/2005	6/13/2005	6/13/2005	7/23/2005	7/13/2005	6/2/05	7/12/2005	6/2/2005	6/2/2005	6/30/2005
Sample	Mixed. Managers - NOn managers (mixed) 1) a treatment group (43 subjects) , which received the basic management training program within a graduate school of management at a major southwestern university. representative cross section of employees from both public and private sectors all courses were held on campus. enrollment figures indicate approx equal numbers of females and males., and (2) a control group (47 subjects), which represented a similar sample of subjects. participants in the treatment group identified prospective enrollees. participants were asked to provide names of employees in tier respective organizations who were similar ot them with respect to job level, job type, and experience.	Supervisors. 15 trainees who were seelected by a strategied random sample of partics in three MDT sessions offered throughout the year. Lockheed Martin (LM) has seven levels of empees - president, VPs, Directors, Managers, First line supervisors, technical leads, and all other employees. First line supervisors - 15 treatment group and 15 control group. Spvrs took trining because they desired enhancement, supervisor suggested it as part of development or deficit recovery plan (determined by questionnaire give to all trainees). Control group was matched tothe treatment group by grade, length of service in current position an dnumber of subords (ref Cook and Campbell--	Mid-level Managers. 10 (of 13) midlevel managers in Direct marketing Company (Mountaineer Gear). All employeed full time for at least 7 years and all in midlevel mgmt positions for at least 5 years. These inclusion criteria ensured the study prtics had experienced multiple org changes as midlevel managers and ensured they had substantial history with the company, providing a basis from which to discuss org growth events as well as any changes in learning processes that had occurred. No other criteria such as age or gender were necessary. 8 womena nd 2 men participated. 8 of the 10 started their employment in nonmanagerial positions. 2 were hired into mid level mgmt	Mixed. Participants were recruited thru referral of a senior consultant with Pecos River Learning Center, the consulting group contracted with to foster deep learning in the dev of the company's leaders and the culture. Participats rep across 3 divisions. Recruitment occurred at three different sites within the company and included representation across age groups, yrs of exp (avg. 14.8 yrs), length of exposure to deep learning work, ethnicity and gender. 8 mena and 6 women took part in one on one interviews; 9 interviewees were	Mixed - execs, managers, non managers. Ohio Component Manufacturing Company (OCM), specifically at a plant called GC, in the Hose Division. The sample was comprised of employees of the Hose Division who are a) responsible for implementing "lean" manufacturing, viz. manufacturing managers and production workers, and b) other staff specialists and executives involved in supporting the line organization, such as purchasing agents, information technologists (IT) and staff operations specialists. Thirty-	Mixed. Individuals enrolled in thse programs generally had at least ten years of managerial experince. Managers partics enrolled in dev program that were part of an execs eductio component of a specialized advanced degree programs at a large southeastern university. Archival assessment data pertaining to dev prog partics wer utilized. Individuals who were enrolled in an executive dev program for a one year time period between 2000 and 2003, inclusive. Among assessments, each indiv compelled a multisource perf appraisal as well as teh CA Psych Inventory.	Mid-level Managers Thirty-five managers; Immediate subordinates of manager-participants were invited to participate (n = 60). Over 56% of managers were between age 30 and 34 ranging from mid-twenties to late forties. Seven subordinates and seven managers were female.57% were caucasian, 6% Asian, 3% African-American, 6% Native-American, and 15% left the item blank. Majority of mgrs completed a BA or BS (63%). Average number of years in a mgmt position was 2.56 (SD = 2.6), average years at this particular org was 2.9 (SD=3.1), and mean number of subords managed was 3.72 (SD=3.6). Majority of subords were also age 30-34 (51%) ranging from mid twenties to late forties. 46% were caucasian, 27% asian, 6% were latino, 5 african american, 2 were multiethnic, and 1% were native america, and 3.7% left the item blank. Majority of subords also had completed a BA or BS (53.7%). mean # of yrs at this org	Mixed - Managers Thirty two managers from two fortune 1000 companies located in San Fran bay area. Following selection criteria were required of all subjects: managers volunteered to take the training (an open enrollment model) and 2) manager directly managed at least two people and 3) managers acquired permission from exec mgmt to participate in and comlete trng. In the SDMS group, the # of people managed per participing manager ranged from two to sixteen. Instructor led , # of people manger per partcig mgr ranged from 2 to 60. All levles of management were represented (VP to Director, Sr Manager and Supervisory). Managers across	Executives. Q methodology comprises two types of samples: the person or P-sample and the statements or collection of stimuli presented to the P-sample, the Q-sample. Method is a process of discovery and not on prediction, deduction, or hypo testing, so the P sample is not used for generalization. P-Sample was obtained through direct marketing. A brochure was used to solicit participants. Ss consisted of execs of corps including private and public, and independent consultants and business professors. 40 was the target, all but four partics were from a business discipline, representing fortune 500 cos, independent executive training orgs and public utilities. Industries repd: telecomm, Info sys, banking, health care, utilities, adn independent trng services. Two partics were business profs from higher ed institutions, and two came form social svcs. Org functions repd: sales, makering, cs, sfcd, IT, and production. of the 40, 26 were female and 14 male. At the close of	Mixed. Three groups within the org. Three groups: Sr. Management team; middle managers; and the entire organization.	Mid-level Managers. Participatnts were in an existing mentoring program at Sandia National Laboratories, which is a large research and development lab with its main facilitatites located in Alburquerque, NM, and Livermore, CA. It is operated by Sandia Corp., a Lockheed Martin Company, the the U.S. Dept. of Energy (DOE). Sankia provides scientific and engineering solutions to meet national needs in nuclear weapons and realted defense systems. Participants were located at the Alburquerque facility. Participants were already matched in pairs, adn the pgoram was already in progress when this study began. Mid-level Managers. was 42 pairs in the mentoring program at Sandia National Laboratories	Mixed. Middle managers and supervisors; Participants of five CPM Level II programs in Florida. All 128 respondents were full time employees. Demographics captured included age, sex, marital status, education attainment, term spent in management position, and related reactions concerning their participation and the participation of their group members. They were either self or organizationally selected to participate in the program. In FL many partics are selected to attend the prgrms by their org based on suggested selection criteria by the FI center for public management. All partic is on a voluntary basis. 116 participants completed all instruments and data gathering instruments. therefore analysis is on 116. Typical Participant is male, age 40 - 49, married, college degree, in current position one in five years, served in a supervisory capacity for one to five years, and has	Sr. Managers. Contacts at Managemet University determined the best audience for this study would be alumni of their Leadership program. All were senior management or executive level. All were federal government employees at the GS 13-15 management levels (pay grade).. All are members of the Leadership Program Alumni Association (LPAA). Each exhibited characteristics of lifelong learners, since they volunteered to take the ELearning course. Recruitement: Director of the LP program emailed co-presidents of the Alumni describing the research. LPAA Co-presidents agreed to distribue a letter indicating the rquirement that the volunteers would have to commit to five weeks of training (free training).	Supervisors, entry level mgrs. employees of a national aerospace research laboratory who had been chosen as candidates for entry-level management and supervisory training at the laboratory	Mixed. Front line Managers and Supervisors. 250 front line managers and supervsion that were randomly selected using a stratified random sample from a population of paprox eighhundred people. Random selection allowed for three levels fo mangers from 10 divisions to have an equal and independent probability of being selected. Participation included involvement with eh survey process, during both pre and post training. Managers themselves provide dmeasures of individual perf using the Individul Behavior Questionnaire. When surveys were matched from the pre the posttest, only 47 partc provided usable data for this study.
DIAD	3 = Opportunitistic / Emergent Sampling 5 = Somewhat dense description; sample compared to demographic data in terms of gender; characteristics of specific partics being studied compared to demographics of larger study group - yes for the most part.	3 = Strat Random (treatment); and matched (control) 5 = reported characteristics of partics studied compared to (not larger group, but control group) Cook and Campbell were referenced. Also, findings were compared to other published studies.	5 = Criterion Sampling 5 = Yes - dense description to allow transferabilty	3= Purposeful sampling. 5= External validity sampling - not outlined in study.	3 = Purposeful random sampling 5 = Yes, dense description.	3 = Criterion sampling 5 = no--data is limited in terms of sample popotation compared to demographics of a larger population. Chosen from archival data.	3 = Criterion sampling 5 = limited - charcteristics of the partics beingstudied as cmpared to demographics of larger group--chosen from technical, business, and creative branches of company -full representation from each branch.	3 = Criterion sampling 5 = Dense description available to allow others to assess transferability of findings.	3 = Purposeful random sampling 5 = A description of sample was provided including demographic data.	3= Stratified purposeful sampling 5= Dense description was available to allow others to assess transferability of findings. Further, findings can be matched to other published conceptual frameworks employed via LSI studies (mentioned within the study).	3 = Criterion sampling 5 = Data is reported indicating the characteristics of the specific participants eign studied as compared to demographics of the larger group.	3 = Purposeful sampling 5 = Dense description	3 = Criterion 5 = Clients provided participant pool	3= Criterion 5 = A dense description provided.	3 = Stratified purposeful sample 5 = description was available to allow others to assess transferability of findings.

Variables	what effect(s) the use of a management development program would have on the subjects' locus of control as well as on their job satisfaction, based on (1) participation (or non-participation), (2) position status (manager or non-manager), and (3) participation/status interaction. Two variables were measured using two instruments, Levenson Scale (3 scores) andthe Job Diagnostic Survey (one score). all were administered pre and post at comparable time intervals. Subjects also completed demogrpahic questionnaires.	Ind Varible - behavior modeling training program. Dependent = Transfer - demonstrated behavior (key actions) in each MDT modeul 7 months after training. Treatment group cmpared to control gorup to assess if the behavior modeling program increased the transfer of training as observed by trainees, their supervisor, and their subordinates. Effectiveness of training was determined by assessing tansfer of traiing observed by the trainees, their subordinates, and the trainee's supervisor.	how the processes by which they learned individually and collectively changed over the course of four organizational growth events spanning 15 years. Changes in learning processes were reflected in channels of communication and in decision-making and socialization processes. Research Question - Did the process of org learning change as the company grew? Subquestions: What evidence exists, if any, that changes occurred in teh component processes of org learning before and after different growth events? Waht was the overall pattern of change in the component porcesses of org learning as the company grew in age and size? How was the pattern of change in the process of org	Practices and organizational supports that faciltiated deep learning in the leaders. 6 components that interact wth one another were. inducted through thematic coding and determined to be fundamental or facilitating deep learning:. Catalyst, context, conditions, content, capability, and culture (descriptions start on p. 60). It is the authors view that "the occurrence of an awareness and consequent reflection on that awareness are as important as behviaroal manifestations a indicators of deep learning" (p. 54).	organizational learning and transfer of learning in the context of planned organizational change reveals concrete ways that learning occurs and both affects and is affected by the knowledge transfer process. Research Qs: How does org level learning occur? As outlined in the literature review, three learning methods have been theorized to explain how OLL happens: 1) shared or saturated, 2) distributed or networked and 3) chaotic. These three rameworks will be explored by looking at how learning was done in the context of	Goal of study was to examine the active pursuit of dev following feedback receipt in a dev program. specifically, examined potential predictors of deve action including perf feedback and personaliyt chacteristics fo the feedback recipients. 360 - Rated on 162 items (36 performance scales) by self, subordinates, peers, and supervisor. Indpendent Varibalbe: multi source performance data. CPI is a self report personality meaure consisting of 480 items. These items form 20 folk scales tha tfurther group into 3 vecotr scales. Exaines individuls by using ordinary and familiar terms and concepts that are easily recognizable and used to describe and understand day to day behaviors. IV: personality measures Survey to facils included 23 items which consisted of likert type scale. Final 2 items	Objectives of study were 1) to tset the hypo that specific manager behaviors contribute to the devlopment of trust toward managers by employees, and 2) to test whether training managers in these behaviors can increase employee trust within a three month time period, and 3) to explore the relationship between trust and workrelatd attitudes adn emiotional well being of employees. 4) Traiing manages to behave in more supportive ways is an effective wayto improve employeetrust toward managers, employee work related attitudes, and employee emotional wellbeing. In particular, the positive psychology constructs of job satisfaction, emotional well begin, and state hope were examined. Assessments were completed two weeks before the training and immediately after. Trust measures = abilty (six items -alpha ranged from .85 - .88); benevolence (five items with alphas at .90, .88 in past study);	Pretests and posttests on knowledge, skill, and intrinsic motivation towards training content were administered. Also, 2 months following, researcher conducted interviews with all manaagers using a Transfer Questionnaire. Dependent variable = Transfer ratings RQ1 Compared to tradítianol instructor led worksop delivery, does the SDMS delivery method yield higher knoweldge adn skill acquistion? To address this q, partics were pre and posttested on two multiple choice tests covering ocurse contetn. They also completed a pre adn post self report survey on skill acquistiion. RQ2 Compared to traditional instructor led workshop delivery, does	RQs: Do changes in perception of members' authority relations occur during an experiential eduction program? Perceptions of authority relations have been selected as a measurement of change because individ authority perceptions are not only central to group formation but also resposnible for shaping indivdiaul expereince and actiosn in societal systems (Argyris & Schon, 1978), and the concept of authority and ledership underlie the work of a Tavistock conference. RQ 2: What is the relationship between any chagne in perception and the individs locus of control? Recent studies suggest a connectino between individual differences and constructed relationships (Kahn & kram, 1994), shoing how various self concepts shape org members' ability to perform effectively. Concepts in this regard include loca of control, self efficacy, self confidence, self understanding, and self actualization. Locus of control was considered in thsi study. RQ 3. Are any changes that occur	Each of the three groups expereicnes were discussed with respect to how its dynamics, behavior, and views changed over the course of the process. Three core OL processes of kowledge acquisition, distribution, and utilization were observed (or not).	This study examined the effectivenss of mentoring as a training method for managers and senior level technical staff, and to propose a conceptual model for astructured mentoring program in an organiation. Looked at which factros influenced the sucessful outcome for the participatns, and evaluated the skills that were transferred from the mentor to the protege. H1: Various factors of a mentoring porgram will have a positive effect on proteges. H1a: The amount of time thementors and proteges spend together will have a correlating effect on teh success of the relationship. H1b: the quality of porjects assigned by the mentor will ahve a positive effect 0 nteh success of the protege. H1c: the extent to which the mentor is	Study explores the relationship of interperonsal communication competence and the outcome sof expeiential education. Focus was on factors that may influenc the learning of participants in experiential education, the satisfaction of participants in experiential educaiton, and changes in perceived interpersonal communication competence of participants engaged in experiential education. Specifically, this study compared participant commnictio competence to their learning and self reported satisfaction form an experiential education event. Interpersonal Commmication Competence Instrument was used with measures of learning to determine the impact of communication competence on the learning performance. A post measure of interpersonal comm competence was taken from participants to look for any	RQ1. What were the student perceptions of the action learning approach to the course - Level one: Satisfaction? RQ2. What was learned? RQ3. Was the learning being used and if so, how (level three)? RQ4. Did the learning have a psitive effect on the host organizaiton (level foru)? Upon module completion, semi-structured interviews were employed to examine the reactions and actions of the twelve participants as each of them tackled their own unsolvable problem (open-group approach). The course was evaluated using Kirkpatrick's (1994) Four Levels of Evaluation. Those four levels address (1) Reaction, (2) Learning, (3) Behavior, and (4) Results.	construct chosen for evaluation was the change in attitudes of the trainees toward leadership interpersonal interactions between them and their subordinates as measured by the consideration and initiating structure scales of the Leadership Opinion Questionnaire (LOQ).The trainees' evaluation of the degree in which the training assisted them during the transition process was also assessed. In addition, a correlation between the changes resulting from the training and dimensions of the Myers-Briggs Type Indicator was also performed.	DV - individual performance and organizational performacne. Ind Perf was operationalized on seven performance dimensions: a) communication, b) control, c) leading, d) planning, e) problem solving, f) managing relationships, and g) the ability to manage oneself. All derived from the literature review. Org performance was operationalized using two dimensions based on the review of literature: Quality of management relations as perceived by subordinates and teh frequency of th egrievance filing rate. RQ1. To what extent do management dev program improve managerial
Intervention	General Management Development. This study was intended to enhance the understanding of techniques used to increase management effectiveness in organizations. Utilized a 15 week managmeent development program. One semester professional diploma program. As of 12/95 the program had graduated over 3,000 managers. of these graduates, 2,000 were enrolled on the campus and 1,000 were enrolled at their workplace. The program was designed for the new manager or supervisor wanting a grasp of the management process or the experienced manager with little or no formal management traiing. Other types of participants included the small busines person needing to develop fundamental *management skills, the seasoned* manager wishing to resharpen specific fimctional skills, and other persons want to develop an understanding of management. Particpants met one morning per week for 3 hours for 15 weeks (toal of 45 classroom hours). Content was focused on 1) Dealing with Self: Time mgmt, delegration,	Interpersonal. Behavior Modeling. The study evaluated the tansfer of traiing of four behavior modeling sessions that addressed interpersonal skill development. evaluated the effectiveness of a behavior modeling management development training program. Training has been offered to managers at Lockheed Martin since 1993. MDT consisted of four moduels: the basic principles of leadership, giving constructive feedback, *establishing performance* expectations, and confronting issues with managers and peers. Progm offered 3 times a year to first line supervisors. HR personnel certified by Zenger Miller provided the training. LM has a	Informal Learning. Discontinuous. Historical view of process of organizaitnal learning, which was described as having 3 components: knowledge acquisition, knowledge sharing, and knowledge use. 1st, identified key org growth events from the perspective of the participants, and then examined the component proceses of org learning before and after those events. During each interview, I asked the partic to discuss the org growth event or events that had most signif *contributed to their* learning. Then, thorugh the interview porcess, each partic explained his or her asertion about learning processes before and after theat event occurred. I then situated the entire group on these events by lookinf for	Double loope learning. Deep Learning. Development through Deep Learning. Leadership Retreat: explore and understand the experiences of one company as it engaged its leaders in deeper forms of learning in order to develop their abilities to lead. Content of the retreat was deisgned so that it had applicability to day-to-day life. In this *way, partics were* able to see connectiosn betweenl he event of the retreat an the application of learning back on the job. Ample time was devoted to practicing new skills	Informal Learning. Discontinuous (will need to define for coding). The two research questions are investigated in the context of two process changes which are considered here to be subsets of strategic change, they are 1) conversion from mass production to lean production and 2) implementation of electronic procurement which is a web based, digitized, *highly visible and* interactive information base between supplier and manufacturer. These processes have been selected because they are pervasive in the manufacturing sector and in concept they	MSMR. delineate reasons for differences in participant behaviors in developmental programs—why some pursue development and others fail to participate in developmental activity. Specifically, the roles of performance and personality were examined. Individuals completed 360 feedback regarding management skills, also comleted the same performance based instrument describing themselves. also completed a personality measure. Upon receiving feedback, prog partics were asked to carefully review feedback, looking for trends in the data. Based upon their review, *individuals devised* personalized dev plans and submitted these plans to their asisgned facilitators. Facilitators then worked with individs throughout the eyar to provide suggestions and resources to hold indiv accountable for submitting monthly updates on their	General Management Development. Trust. Among sample, half were randomly assigned to the treatment grou and half to a wait-list control group. For each manager who participated 1 the study, all of his or her immediate subordinates were inveted to participat in the sutdy. Number of subordinates per manager ranged from 0 to nine. A total of sixty subordinates were recruited. Althought the managers were randomized, the subords were considered to h e the unit of analysis.35 managers and their subord were randomly assigned to an intervention condition or a waitlist control condition. Intervention-condition managers *received a* three-month training on behaviors hypothesized to develop trust. Since ther was not prior literatrue on specific amanger behaviors that lead to employee trust, ten target behaviors were selected and hypothesized to have possible links to subordinates perceptions of manager trust, benevolence,	Informal learning. Self Directed. Self Directed Motivation System. This study compared two delivery methods: Instructor-led workshop and Self-Directed Motivation System (SDMS), a new delivery method using a telecoach and online instructional materials. The content for both experimental and instructor led workshops was exactly the same and focused on three skills in the field of performance management. It was called Increasing Employee Effectiveness: *Performance* Management Techniques. Both treatments (workshop and SDMS) were delivered by the researcher without cofacilitator assistance. Skills = 1) can write measurable objectives;.	Informal Learning. Experiential Learning. study explored the effectiveness of the Tavistock model, an experiential learning approach, in mobilizing change in the perception of authority relations of business executives as they interacted in a group relations event. The Tavistock model purposefully leaves what is to be learned in the hands of the participants. A secondary goal was to test perceptions about this model as an effective executive development program. Intervention was an experiential educ prog in Tavistock style. components included a) didactic learning in the form of a 1-day, traditional classroom lecture, intended to accelerate the learning *process without interfering with the* objectives of the Tavisstock concept; b) a 2-day experiential event with traditional small group andintergoup programs and c) a 1 day application event, in chiwh partics applied their learning to real and spefici work situatins. Workshop faculty were directed to focus on expliict analogies to	Double loop learning. Large Scale Intervention (LSI). Double loop learning. Underlying purpose for the project was to build the understanding and commitment needed to effect rapid transformational change thourh whole system learning. Central research question was, "how can on explain the organizatinal dynamcis associated with a large scale intervention using the two lenses of *organizational learning* theory and the theory of complex adaptive systems? Overarching purpose is the study of org learning and its relationship to the behavior of the org as	Informal Learning. Mentoring. Purpose of study: examine the effectiveness of mentoring as a training method for managers, to assess the transfer and/or improvement of managerial and leadership skills, to identify the determinants of a successful mentoring program, and to propose a conceptual model for a structured, formal mentoring program in an organization. Purpose of developing Mentoring program at Sandia: enhance employee contribution through increased knowlege of Sandia Nat'l Lab culutre, strategy, and programmatic direction. A major concern was to provide an additional mechanism for the transfer of knoweldge and skills at risk due to retirements and as an	General Management Development. Public Management. Management development trainees attended the Certified Public Management (CPM) Training course- 8 part management traiing and development program adminstered by the FL State University to managers, mostly in state, county and city governments acros FL. Program is rigorous and includes classroom instruction, outside readings, examinations, and writing requiremetns. Follows an adult learning model and employes many experiential ed activities throughout the curriculum. Emphasis of *learing is on practical* application, and the experiential ed activiteis support this emphasis on learning by doing. The second course offered in this program is Level II: Management of Group Performance and is focused on who people work in groups and teams. Attendance ragnes from	Work-based learning. (Action Learning). Purpose of study was to examine the impact of the action learning process upon a management level e-learning course. A leader-led, face-to-face delivery course about action learning was modified for online delivery as an Action E-Learning module. The Action E-Learning © module provided a constructivist approach to the instructional design using action learning as the methodology. Focus was on the open group approach, which allowed the parics to puruse something of interst to themselves adn address it ina relatively short *time frame (5 weeks). The* open group approach is one in which each set member brings an unsolvable problem to the set. Sset member questions are evenly divided among the probelms. Each participant brought his/her issue to the table. Issue had to be current, one	Interpersonal. objective for this study was to design and assess a training strategy that would be effective in developing interpersonal skills for entry-level technical managers.	General Supervisor skills. Employee Relations. Purspoe and intent of the traiing is to improve management relations and reduce the union grievance filing rate. In order to accomplish this objective, the org implemented a training and developmetn program tha tis designed to guide managers in effective communication strategies andmanagement methods as well as increase their overall effectivenss and *succeed in imporving* mangement relationships. The Learning, Traiing, and Performance Development division, located in Long Beach CA offers a three day onsite program. the three days are
DIAD	1 = Intervention "thick" description = yes. Embedded in a network of theoretical concepts/findings of previous studies: NO	1 = Thick description of intervention = Yes.	1 = Yes Thick description of intervention; thick description of network of liteature	1= Thick description of phenomenon/intervention.	1 = thick descrption of intervention.	1 = Description was adequate, and was embedded in a network of concepts/findings from previous studies.	1 = Thick descrption of intervention.	1 = Yes - thick description.	1 = Intervention was adequately described, and description of literature was associated with intervention.	1= Yes, thick description	1 = Thick description of network of literature associated with the intervention.	1 = Somewhat; outlined activities but did not describe in depth.	1 = Thick description of intervention was provided.	1 = Thick description of intevention.	1 = Yes, thick description.
Method	Quantitative. Experimental (random). causal-comparative study: Two groups of subjects were involved 1) treatment group consisting of 43 subjects, which received the basic management training program and 2) control group (47 subjects) which represented a similar sample of subjects. Levenson's 24-item locus of control scale was administered. Using this Likert scale, three separate dimensions of locus of control (internal, powerful others, and chance) can be identified. The perceived locus of control of each subject in the treatment group was measured by a pretest, followed by the training program, and then measured again by a posttest approximately one month after the program had ended. The control group received only the pretest and posttest, at comparable time intervals. The standard version of the Job Diagnostic Survey (Hackman & Oldham) was used to measure job satisfaction of the participants. Only items from three sections (3, 4, and 5) were administered (39 questions total). The level of job satisfaction in	Quantitative. Quasi-experimental. Pottest-only design resulted in a realistic evaluation of how the key actions of behavioral modeling transfere to actual job performance.Quasi Experimental design in a field setting. (referenced Cook & Campbell, 1979). A posttest-only design was used to control for participant sensitization (referenced Baldwin, Latham, Moses and Werner). Interrater reliability. Total randomization was not possible. Used a matched control group for comparison of the trinee and non trainee surveys. Survey desigend to assess behavioral demonstration of the key actions was given to each trainee, one of their subordinates, adn each trainees immediate	Qualitative. Case Study. Descriptive, intrinsic (not undertaken primarily because the case represents other cases or illustrates a trait or problem, but becuse in all its particularity and ordinariness, this case itself is interesting), retrospective case study using a grounded approach to analyzing the data. Data collection: individual semistructured interviews, whereby identified themes and patterns tha tcreated a composite picture o fsignificant org growth events and learning proesses over a 15 year period encompassing thoese events and processes. Each participant selected and discussed changes in organizational learning processes that they associated with one or more organizational	Qualitative. Case Study: My research design incorporates opinion-polling of subject matter experts, semi-structured interviews and participant-observation methodology in ethnographically describing the practices and organizational supports of the case study company to foster deep learning in its leaders.	Qualitative. case study; multilevel, multifunction interviews. Grounded Theory. While this study was exploratory rather than "hypothesis testing" in nature, much of the situation had been analyzed provisionally prior to actually collecting the data. This enabled the interview to be focused and bounded, to be somewhat structured through a preplanned interview guide, which offers some assurance of comparability or at least connectability from one interview to the next (Merton, Fiske, Kendall, 1956). The art of exploratory	Quantiative. Experimental. Factorial design.Although all data pertained to participants enrolled in yearlong leadership development programs, some of the data used were archival in nature and additional data were collected solely fo rthe purpose of this examination. Specifically, archival data consisted of personality ratings and 360 degree perf ratings that were reviouly obtained. Data collected expressly for the purposes of the present study included direct ratings of partics active involvement in an executive devt program. Tests by using factor analysis (Maximum Likelihood method) and one factor was extracted. and Quartimax rotation was also used, which allowed general factor to emerge as well as id of any additional facets of involvement that may pertain to study. Archival	Quantitative. Experimental. randomly assigned to a treatment or control condition. Repeated measures ANOVAs were used to assess change in maanger behavior and employee attitudes and emotions between baseline and follow up. A series of regression analyses were run to examine futher the relationship between manager behavior and trust. Because of high correlations between the ten target manager behaviors (up to .81), principle components analysis was sued to reduce the data in order to avoid multicollinearity. A two factor solution fitted teh data best. The two factors were labeled ongoing behavior (ilistening and giving feedback, appying company values, apply consistent values, adn making an effort to understand employe values) and scheduled behavior (behaiors manager would practie on aquarterly or annual baseis--givening recognition, having a scheduled coaching session, creating a deveopmnet plan with	Quantitative. Experimental. used a two-group, pretest-posttest randomized block design to compare the effectiveness of two training delivery methods: traditional instructor led workshop training and self directed motivation system (SDMS); with intrinsic motivation as the blocking variable. Partics were randomly assigned to one of two training methods, and were taught ghree skills concerning increasing emplyee effectivenss through perforamce mgmt techniques. Pre and post tests on knoweldge acquisition were administered, as were pre and post surveys on skill acquistion and levesl of intrinsic motivation towards training content.	Mixed methods design: exploratory study used both quantitative and qualitative methods: Q-methodology and a questionnaire augmented by personal interviews, respectively. The results were triangulated in operationalizating the Kirkpatrick model, a widely accepted evaluation method for training and development programs in organizations. This study was desinged to explore and evaluate the effecitvents of an experiential education approach in providing development to executives. Effectiveness was investigated from four persepctives: a) changes in perception of authority relations as experienced by business executives participaint in a group relations conference modeled in the Tavistock tradition, b) the role of locus of control in changing perceptions of authority relations, c) the executives' satisfation with the learing they experienced, andthe approach taken to provide it, and d) the transfer of learning (i.e., changes made) to the work environemtn.	Action/Practioner Research. Large-Scale Intervention (LSI) at the core of the research design. Used the Real Time Strategic Change Model. Included three separate events spread over a five month period and the fifteen months following. A longitudinal study to show whether the LSI had a substantive and lasting impact. It will illuminate what did or did not work and attempt to expalin why. The case was comprised of three major phases of a LSI process. Each phase was an event centering ona particular group within the org. 1) District Mgr Team Retreat - 2 days of data gathering	Mixed methods. Quant. Quasi-experimental. Intended to draw inferences about causality and has come built in controls tha tmake it reasonable to draw some tentaive conclusions about cause and effect--it involved manipulatio but not random assignment or control over the time of measurement. Both quantitative and qualitative data collection methods were used. Quant = written instruments adminsitered by this researcer. Data were used to answer the porposed quesitons and hypotheses. Qual = gathered through interviews with randomly selected sample of the participants. Used primarly for clarification and affirmatio fo the quant data. Instruments were	Quant. Experimental. Participants were asked to complete a self report assessment of their interpersonal communication competence. Participatns were randomly assigend to groups during the soucre to equalize previous experience, competence, and other individual factors. Each group participated in teh same variety of experient ed management training activities. After th ecourse was completed and the faciltiatiro summarized teh course, the participants completed a self report of thier leanring satisfaction from participating in the course and a 20 point multiple choice exam on the content of th ecourse. They were also given a revised copy of the self reprot assessing their interpersonal communication competence. they were instructed to comltee the instrument in one week and mail it back to the researcher in a self addressed stamped envelope. In addition,	Qualitaitve. Exploratory case study of a mangement virtual, asynchronous online course. After completeion of the course, each participant was interviewed (appendix B - protocol). All interviews (except one) occurred at the participatns conveninece, within one week of the course ending adn were conducted by phone. All telephone interviews were transcribed and resubmitted to interviewee for confirmation, correction and additaional comments. Interviews were coded.	Quantitative. Experimental. randomly assigned to one of two training groups. Each group received identical training in the first phase of the study. Following this phase, one of the groups participated in an adjunct training curriculum developed to complement the first phase of the training. This program focused on increasing the awareness of the role of interpersonal skills in management, the development of these skills and transfer of these skills to the job. As compared to a control group that did not receive any training	Quantitative. Quasi Experimental. Research involved the evaluation of a training and develoment program. In order to determine the impact that the training had on the individual, measures were obtained using a quasi-experimental design, a one-group pretest-postest design wehre subjects serve as thier own control. Individuals were surveyed before beginning the trining and once again 3 months after the program. The pretest-postest design allowed for careful evalutaion of the impact o th skills acquired a a result of the development program. Due to the fact tha tthere was no comparison group to serve as a control group, the pretest

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DIAD	7 = Transparency in data analysis (procedures identified) = No ? Quant 8 = Yes (see outcomes)	7 = Yes (Effect Size estimation) 8 = Yes - completeness of reporting	7 = Yes 8 = Yes	7= Componential analysis 8= Audit trail evidence presented regarding methods, decisions, analytical strategies and findings.	7 = Yes - constant comparative analysis 8 = Yes. audit trail presented regarding methods and in particular analysis.	7 = Yes (Effect size estimations) 8 = adequate audit trail in terms of methods and decisions for analysis.	7 = Effect size estimated 8 = completeness of reporting - adequate.	7 = Effect Size 8 = Yes - completeness in reporting regarding method, analytical strategies and results.	7 = Yes, Quant = Factor Analysis; Qual = thematic analysis; Tesch's (1990) eight steps for systematic process of analyzing textual data were comined with methods of Miles and Huberman (1984) to identify conceptual anomalies and other emerging insights. Also, Vignettes were used. 8 = Yes, descriptive trail presented for methods, decisions, analytical strategies, and results.	7= E. Other transparent thematic development procedures. 8= Audit trails were provided regarding methods, decisions, and analyticalstrategies and results/findings.	7 = Yes - Effect size from quant. And coding from literature for qual. 8 = yes - completeness of reporting; aduit trails for decision, methods and results.	7 = Analysis procedures identified; effect size needed 8 = completeness in reporting methods, analysis, and results.	7 = Coded from framework constructs, and open codes emerged from the documetns content as well. Also, KWIC. 8 = Provaluation was used.	7 = Yes 8 = Yes	7 = Yes 8 = Yes
Outcomes	The pretest and posttest scores obtained from both instruments were analyzed using Pearson product-moment correlations, homogeneity of regression coefficients, and a mixed design. Results indicated there was a strong relationship between the pretest and their respective posttest scores (p <.01 level). There was also a correlation between four of the six posttest scores (p <.01 level). There was interaction between the pretest JDS score and the independent variables (p =.03); therefore, analysis proceeded with a mixed design, using time as an additional independent variable. No relationship between any of the three independent variables (group, status, and time) and the four instrument scores (three Levenson and one JDS) was established (p =.01 level) using four ANOVAs. For Hypo 1, Pearson correltaion coeffics indicated there was strong relationship between pretest scores for locus of control and job satisfaction and their respective	the mean scores between self-evaluation, subordinate-evaluation, and supervisor-evaluation were positively correlated. ANOVA using the transfer of training as the dependent measure showed a highly significant main effect for treatment condition. No interaction effect for position was found. These results support the hypothesis that there is a statistically significant difference between the control group and the experimental group concerning demonstration of the key actions in the workplace as perceived by the trainees, their supervisors, and their subordinates. The results of the present study support the use of beahviro modeling in industry to improve	The findings suggest that learning processes did change as the company grew. Parties described learning processes in terms of observable changes in the org including channelsof communiction, decision making processes, and socialization as manifested in orientation processes. Change events included: implementation of TQM program in 13th year of business (established to improvee org performance iwth the goal of providing world class customer service. employed four startegies to achieve this goal: create a culture that demonstrates continuous learning and improvement, manager by fact (data driven deciion making), institute busines porcesses and 4,	My findings propose that deep learning occurs as a result of an often unpredictable and dynamic interplay amongst a variety of components. See variables section. Add information from chapt 4--see comments section.	Rigorous application of grounded theory methodology produced a model of learning wherein (a) willingness to adapt is antecedent to learning at the organizational level, (b) mental maps are influenced by both intrapersonal and interpersonal processes, and (c) emotion is as central as cognition relative to the construction of both willingness and mental maps. This interactive, iterative process of assessing, believing in, choosing, and owning the change is called locker room learning to situate its development and enactment in the everydayness of job performance rather	Factor analysis on facil ratings: Reliability of facil rating scale was judged to be acceptable (alpha = .97). Factor analysis ratings confirmed the existence of a general factor. Approx 63% of variance was explained by this one factor. Using Maximum Likelihood factor analysis, allowed for three factors to emerge. A primary factor, activity in a dev program, and two secondary factors, which echoed the results of the previous factor analysis. The factros were: Feedback Acceptance and Organized Approach to Development. (info on factor loading on page 41) Performance Ratings: to summarize perf scores assigned from raters the rwg (wg underscored) statistic was calculated for each gruop. the value for peers was .80 and for employees was .79. becusae both were grtr then .70, the use of mena	1st hypo was only partially confirmed beause ongoing an dscheduled behaviors were found to be rlated to components of trust, but not to an overall measure of trust itself. The 2nd and 3rd were confirmed. Emotions and attidues examined were job sat, org commitmnet, state hope and emotioanl well being. It was found that subord who felt more trust toward their manager also felt more pleasure at work, were less tired, less angry, and experience greater job sat. 4th althought the actual measure of trust toward managers did not change isgnificantly by intervention group, subords whose managers were in the intervention group cam to see their mangers as having greater ability and greater benevolence, two of the components of trust toward leadership. At follow-up, treatment but not control managers gave positive recognition and held coaching sessions more frequently than at	The independent sample t-tests conducted on the three pretests were found not to be statistically significnat, indicating that the two groups were equal at the beginning of the study, and that random assignment had created comparable groups. No statistically significant mean differences were found between grups in the knowledge posttest, in the skill acquisition survye, and in the transfer of skills 1 or 2. For skill 3, a statistically significant different was found in favor of the SDMS group. Further, the study found a statistically significant increase int eh level of post motivation scores inteh SDMS group. Becuase the sample size was small, the ower of th istatistical tests was low.	17 (77%) Participants showed changes in mental models of authority immediately after the workshop, but 11 failed to maintain the changes after 6 weeks. Six (27%) made a change and held the change; 5 participants (23%) made no significnat change. From these results it can be inferred that a Tavistrock-style progam has the potential to mobilize a change in attitude about authority relations. Based on these findings, dependent and interdepdnet indivuals are more likely to change their mental models. Counterdepdendent participatns may change but are likely to return to their orginal position. Although individuals entered the workshop primarily with a counter depdndent menal model, the workhosp raised the awareness of 9 participnats (53%) who changed to an interdepdentn stance. Two held this stance throughout the 6 weeks. Qual Analysis revealed themes and	The org., as a complex adaptive system, entered the process in a state of equilibrium. During each of the two largescale events, one involving the middle managers' group and the other, the entire org., the system shifted away from its equilibrium condition. The shift manifested itself in a sudden, widespread behaviroal change in which negative cynical behavior turned positive and constructive. Participation became constructive and tension dissipated. The behavior changes could be attributed to org. learning that occurred during the events. However, because the learning that occurred during	results revealed that the results of mentoring can be assessed in a short period of time, when establishing a baseline of skills, conducting a treatment, and testing after the treatment. The mentees showed a significant improvement on their leadership effectiveness and flexibility from the pre-test to the posttest. Other variables tested were number of meetings between the pairs, quality of projects participated in, availability of the mentor to the mentee, number of phone calls and outside meetings, personality, gender, age and psychosocial benefits received as well as overall satisfaction with the program. The findings of this study were used to propose a conceptual model for a formal	Hypo 1 rejected - those that score high on the interpersonal comm competence instrument will be more satisfied with the learning experinece. Hypo 2 - participants who had high competnecy in interpersonal communication will learn more from experiential education than one who has low competency in interpersonal communication. Pearson tst of corelation shows no significant linear relationsihp between themeasure of competence with the scores on the content post test exam. This would indicate that it is highly likelythat the level II class had no direct impact on how well the partic learned the content. Hypo 3 Partic in experiential ed improves the interpersonal communicatin competence of participants paired t-tests were condcuted. means indicate slight difference, but not statistically significant. This	findings were that the action learning approach provides appropriate data to evaluate the course using Kirkpatrick's first three levels. In an open-group program where the problems presented may be self-development issues, the results for the organization (Level Four) are more problematic to evaluate. Outcomes are outlined based on the eval levels and provide detailed text and input from discussion threads regarding their reaction, level of learning, heavhioral change and results. All interviewees particpated in thea ction learning method. Ten of th etwelve felt theyocuId imlemetn itin their workplace. The two who were dubious did find an application: one thought there woudl be applciation in the region and another sadi	each of the training group's scores on the LOQ indicated significant increases resulting from the training. The training group that received the adjunct training perceived the training eased their transition into a management position and improved their ability to transfer the management skills to their new job to a significantly greater degree than the group that received only the initial phase of training. In addition, significant correlation of results with personality type indicated the opportunity to tailor training modules as a function of personality type.	First Hypo was supported as managers reported significant improement in their own perfomrance from the pre and posttest scores. Improvement was noted in their ability to communicate, problem solve, and arrange schedules and deadlines. Hypo II indicated that an improvement in management skills, based on self reports would be positively associated with the subordinates rating of improvement in management skills. However, it was not supported. Hypo III asserted impromvent in mangement relations based on teh subords evaluation of manager performacne, would
DIAD	2 = results described in terms of related literature? No. Stats were described thoroughly 6 = Findings assocd with sub groups? No.	2 = Yes - oucome measures described. 6 = No testing within subgroups.	2 = Yes Thick descripton of findings and assocaited conceptual theories. 6 = Yes	2= Thick descritpion of findings/outcomes and associated conceptual theories. 6=findings were not broken down into subgroups from sample.	2 = Yes -Findings were described in terms of related literature--thick description of outcomes asociated with theoreis. 6 = No	2 = yes, outcomes were related to pertinent liturature in chapter 2. 6 = limited degree	2 = Yes - tied to literature on trust, job satisfaction, well being. 6 = differences between self assessments and subordinate assessments described.	2 = Yes - findings related to literature. 6 = Testing did not occur within subgroups.	2 = Yes, thick description of findings as they pertained to related literature. 6 = Factors were labeld by describing the various groups and their representative mental models.	2= Yes, thick description of findings/outcomes and associated conceptual frameworks/theories 6= Dense descriptio fot he findings related to subgroup of partics (dist. Mgrs, middle mgrs as well as all org.) Most descriptive with regard to middle mgrs.--3 distinct sub groups in terms of behavioral changes (or lack of them). Use of other forms of intervention have been markedly more effective than LSI with middle manages and frontline employees--learned more effectively with more authentic activities involving intact work gruops. Broken up by districts--LSI had limited impact of laying groudnwork for	2 = Yes, findings adequately described in terms of the related literature 6 = Yes - findings were analyzed in terms of subgroups (e.g. gender, and age).	2 = Findings were somewhat described in terms of related literature--limited 6 = No	2 = Thick description of findings and associated constructs 6 = Dense description of findings related to participants (not subgroups).	2 = Yes 6 = No	2 = Findings were adequately described in terms of literature. 6 = No
Effect Size		moderate to high	N/A	N/A	N/A	Low	Medium	Low to Moderate	N/A	N/A	Moderate	moderate to high	N/A	Low	(medium)

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Setting	Southwestern university in the US	The sudy was conducted using uspervisors on the job. Lockheed Martin Corp. an aerospace company employing 160,000 in the US and 5500 in 56 nation and territories. LM researches, designs, evelops, manufacturers, and integrates advanced technology systems and prodcuts for government and commerical customers. The core business are aernnautics, electronics, energy and environment, global telecomm, info systems and technology, and space and stragetic missles. Lockheed Martin (LM) has seven levels of empees - president, VPs, Directors, Managers, First line supervioars, technical leads, and all other employees.	In the natural envrionment (i.e. *field research*) of the company - A direct marketing firm that has outpaced its competitors in tis rate of growth in market capitalization. Exemplary history of success suggested a strong capacity for adapting to changes in its business environemtn and thus for org learning. The company, Mtn Gear started as a husband wife team and a small retail store. The co. grew in size to 500 full and part time employees 20 years later. It moved, expanded, and automated its catalog fulfillment center and opened a second reail store, and in it's 19th year, it launched its second mail order catelgo. Recied a number of state and national awares for quality, partnership,	Divisions within a company that was operating in a silo-fashion with an undercurrent of command-contro, hierarchical leadership. Culturally, foundation of caring for customers. As noted by a partic, "I think that th culture of the org was at a state of readliness for this work. Readiness to learnand grow is critical for the work of challenging long-held assumptions--individ and organlly--because the assumptions that we make in order to interpret the world around us are deeply ingrained, taken for granted, difficult to	a single plant that is part of a *global manufacturing* firm; OCM provided an excellent environment in which to understand the organizational learning and transfer issues associated with strategic change as outlined in Chapter 3. It is a large, diversified, integrated component manufacturer which operates on a global basis. This sector has been under pressure for the last decade primarily due to new low cost alternatives from abroad. As a result it has constantly sought methods for cutting costs while improving quality. At the same time it has gone	advanced degree programs at a large souteastern university. *Program partics* met at the university for various residence periods throughout their year of enrollment. These residence periods generally lasted from one week to 10 days. Other progam realted projects and assignemnts were completed and submitted from partics home locatios and often involved distance learning activities.	Technology company in the San Francisco Bay area.	Instructor led was held in a classroom, but not *sure where; and SDMS* was remote at participants work envirnemtn.	Held in New Brunswick, NJ, *from 12/6 through 12/9, 2000, 8a.m.-9p.m.. Held in a Hilton* hotel (it was believed that attendance by business execs would be limited were the workshop *not* held in a hotel setting. The faculty were selected to reflect the anticipated divesity of the participants. There were five women, seven men, two african americans, and one African. Age was not asked, but was surmised as being 25% in their 30's and the remainder between 40 and 60--two members *may* have been over 60. All had significnat experience in Tavistock conferences adn more importantly with org consulting practices.	MN-DOT - Meeting rooms	Sandia employess about 8100 employees, of which around 900 are managers, directors or VPs. Approx 60% of Sandia's employees are in technical and scientific positoins, with a large percentage of this group holding Ph.D. and masters degrees. A provision with their most recent DOE contract mandated the implementatio fo a mentoring program for managers and seniro level technical and scientific staff within two years. The program was sought to "foster agility in the workforce an to provide a mechanism for developing peopel to be better able to respond to changing requiements and complex customer needs" (Sandia, 1998). Sandia currently has a large retirement eligible popultion in its ranks anda mentoring program could utilize the	*State of FL (as well as county)* training center.	Management University. A for profit organization that offers management level courses both in a face to face and virtual environment. Managmenet Univesity is a source of training for government and quasi-government clietns. It offers courseware on topics ranging from EEO compliance to 360 degree evaluation to leadership development.	Organization training roo	Organization consists of 230,000 employees globally, with coproate offices located in Seattle WA (after recent merger). Characterized by an inherently diverse work force that consists of union and non union workers. There are six levels in this organization. The employee distribution throughout the org is as follows: hourly, nonsupervisory; salaried, nonsupervisory, first level supervisor, second level superivosr, and upper management. The five job categories included in the org are production-maintenance personnel, *technician/technical* support personnel, office/clerical
ment Characte	Subjects received management *training in a conference room* at the unviersity. Sessions were ongoing for 15 weeks, on e3-hour session per week. Subjects were allowed to miss up to 3 sessions; however, if *they wanted the certificate at the* end, they had to make up all sessions. The Levenson Scale and the same three section sof the Job Diagnostic survey were adminsiterd *to the treatment group approximately* one month after the program ended, via a packet in the umil. a follow up questionnaire was also included.	One Treatment group. Fifteen trainees received the Mgmt dev trainnigs (MDT). Trainees view a video where key actions are presented and demonstrated in detail. Next, the trainer presents the key actions. The trainees then identify a situation they could addressuing the key actions. A second video is shown and the trainees make notes in their triaing materials of how each action was demonstrated durign the video. Next there is a small group practice session of three to four trainees and each trainee gets to practice the key actions with the situation that he or she *identieifed.* the trainer and the othe trainees give feedback. Each trainee gets the opportunity to practice the supevisory role, the	Data collection: *individual semistructured* interviews, whereby identified themes and patterns tha tcreated a composite picture o *fsignificant org growth* events and learning prcesses over a 15 year period encompassing thoese events and processes. Each participant selected and discussed changes in organizational learning processes that they associated with one or more organizational growth events. Analysis of corporate documents and observational techniques supplemented the interview data. All interviews were audiotaped. conducted on site at the comany in one of the three meeting rooms during working hourse over a 1 week period. 9 of the 10 interviews lasted for 90	Teams were clustered into dyads, triads, and small groups dependent on the exercise or discussion; with each new confiuration, charis were moved and rearranged. This physical movement kept the energy in the room high and activley engaged. Another physical aspect was the impact of actual physical connection. During an activiety, the facilitator asked each person to choose a partner and sit facing that partner for an exercise to complete before going to lunch. Shen then asked the partner-teams to put their palms together and stated,"The person	Locker room learning emphasizes the social nature of learning while recognizing the technical needs of the change. Used a combinatio fo life story, critical incident, and focus group interview techniques (appendix B for protocals). Began by interviewing nucleus of divsion responsible for implement "lean" mfg. I moved through the org. interviewing people being lead by the data from one interview to the next, not only in terms of whom to talk, but what the structure of the interview should be. This is one of thekey vlaues of grounded theory	Data from 157 completed *forms* were entered into a database along wth 360 degree per feedback scores and CPI results for each dev program particnat. Survey data collected from facils was entered according to the response indicated by facils for each item: SD = 1; Somewhat D = 2; Neutral was 3, Somewhat A =4, and SA = 5.	all managers and subords completed a set of assessment materials at the beginning and end of the intervention period. At beginning o training, ech partic was given a series of materials used for class and homework activities. Materials were proprietary and included a binder containing posers and booklets that guide partics through the steps of pratigin the target beahviors; a list of behaivorally based homework assignments *Beginning of intervention period* was two weeks prior to the manager traiing program, and the follow up was three months later, immediately upon completion of the training program. Attrition from this study between baseline and follow was relatively low. the final analyses *included* 33 managers and 54 subords. Of the 33 managers, seven dide not have subords. Thus, 24 managers were included in analyses looking at changes in subordinate data.	two training methods, the main difference being 1) experimental SDMS treatment took place i the context of a workplace environment rather than inside a classroom, 2) the SDMS treatment learning was individualized and *therefore* confidential rather than group based and public, 3) praise and feedback in the SDMS treatment was more *focused* on the individual's unique workplce challenges that may inhibit skill acquisition and transfer, and 4) managers *in the* instructor led workhosp (comparison) gorup received positive feedback in a group *setting* whereas managers in the SDMS group received positive feedback on the one to one basis. Despite differences, both groups	Quantitatively, changes in perception of authority relations were measured using Q-methodology, an objective measurement of subjective responses. The Q-sort was conducted before and immediately after the Tavistock-style event, and again 6 weeks after the executives had returned to their work settings. *Qualitatively*, the results of the Q-sorts were further explored with in-depth interviews regarding the participants' perceptions of (a) authority relations, (b) the experience of this nontraditional learning event, and (c) the utility of this model in executive development. The participants also completed a self-report *questionnaire* that measured their level of satisfaction and learning. This study provdied participants with an opportunity to discuss the paplicatio of their leanring to work *enviornemnt* on the last day ofth workshop. It was seen as benefitical, however, there was no welldefined program for support once teh attendees returned to their workplace.	Three *events - District* Managers only Retreat (1st event) Deep open discussion of PAR data develped much deeper meaning behind the issues and the team's interpersonal relationships; Group discussion of each "S" affirmed shared mental model of the 7S model; PAR results and receivin feedback developed infidivudal mental model of perception of themselves and others Contributed to individual doubleloop learning by reavealing the "why's" behind individual behaviors. Comprehensive analysis of teaqm sstengths and wekanesses publicily discussed and stored as permanent record. The coherence of the	Particiants were paired together by the program coordinator, who met separately with the mentors and proteges to expalin their duties, obligations, and exectations. In some cases, pairings had already paried together, based on prior acquaintance or recommendation. Pariing sthen met together *for a* kick off luncheon. After the kick off luncheon the pairings met three to four times throughout the eyar as a group *in* a luncheon format, with a speaker/trainer who talked about areas tha the program focused on. Packets of materials were give to the mentor and mentee, including an agreement tha tthe mentor *and mentee* completed outling their expectations	Partics worked *in* groups throughout the four days of training. Trainers delivering Level II conducted the traiing from an audlt learning model and used experietnail activities to provide learning opportunities conguent with the content of the course. Trainers guided partics through a cycle of performing activities (completing instruments, interactive films, problem solving, group dynamic process identification, inter-group *competition*, situational simulation, etc.), sharing reactions (drawing out feelings, insights, learnings and observation), process (discussion of what happend during activities), generalizing (making inferences about how similar group interaction issues *at work*), and applying (using the knowelge jsut gained in imprvign group reactios during additional activities). this cycle repeated itself throuout Level II, and the learning that were gained were itnegrated and	Learners each brought their own unsolvable issue to the course and used reflective inquiry in the asynchronous threaded discussion to examine and take action on their issues. Online threaded discussions, documetns, emails specific for the course content, and a courseware management tool (Blackboard) was used (providing links to syllabus, discusion threads, email, assignements, etc.). Participants were placed into sets of four to six (necessary for deep learning to take plcae). The set configuration, anutral to action learning, generates stronger intra-group relations rather than intergroup or individual realtionships. The 5 *week timeframe forced* decisions regarding content and sequence. Readings on teh topic of action learning were reduced by two topoics (theoretical foundations and establishing action learning	adjunct training curriculum developed to complement the first phase of the training. This program focused on increasing the awareness of the role of interpersonal skills in management, the development of these skills and transfer of these skills to the job.	the study evaluated the influence of management relations on union grievance filing rates
DIAD	4 = Threats to internal validity possible; potential for extraneous variables.	4 = Posttest only therefore eliminated "sensitization" factor to the concepts. Triangulation:Data gathered from trainee, subordinate and suerpvisor.	4 = Triangulation: Analysis of corporate documents and observational techniques supplemented the interview data	4=Evidence is presented regarding triangulation: sources.	4 = Reflexivity was employed; triangulation employed	4 = limited; contamination-secondary data and survey data used; rich theoretical description/integration.	4 = fully nested analysis of varience conducted.	4 = Member checking employed (evaluator rated transfer of training quality; t-tests conducted on the three pretests were found not to be statistically significnat, indicating that the two groups were equal at the beginning of the study, and that random assignment had created comparable groups.	4 = Triangulation was utilized with regard to methods, sources.	4= Triangulation is evidenced--survey, interview, observation. Further, design, purpose and data collection strategies indicated coherence.	4 = Design, purpose and data collection strategies indicate coherence.	4 = Design, study purpose, and data collection straeiges indicated coherence. Attempt made to equalize demographic commonalities in each group.	4 = Triangulation - observation, interview, and docment (including threaded sicussion) review. Also, peer debriefing (external assessment of research effort) was used, and member checking was employed (via participants in study).	4 = Design, purpose, data collection strategies idicated coherence.	4 = Design, purpose, data collection strategies idicated coherence.

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oretical Frame	Social learning theory. Rotter's Locus of Control (construct which occurs within the context of social learning theory). According to the theory - a reinforcement acts to strengthen an expectancy that a particular behavior or event will be followed by that reinforcement in the future. the locus of control construct refers to teh extent to which an individual feels that he/she has control over the reinforcements (rewards and punishments) that occur relative to his/her behavio. Two contingencies -internal and external based on eh individual's perception of reinforcements as being a consequence of his/her own making (internal) or as being a result of something that is beyond his/her control.	Social learning theory. Behavior modeling (Goldstein and Sorcher 1974); activities associated with - modeling, role play, feedback and transfer of training. Focus is on ne beahivor that leads to changes in attitude andthen to an understanding of the reasons why the new behaviors are effective. Social Learning Theory - Behavior modeling is theoretically based on Bandura's (1977) social learning theory, which describes behavio in terms of a reciprocal interction among cognitive, behavioral, and environmental factors--psychological functioning is explained in terms of a continuous reciprocal interaction o personal end environmental	Organizational Learning study is grounded in theories of organizational learning and organizational change, and draws from literature in knowledge management and social psychology. However, no model or framework was used. The concept of adaptive org learning effectively mingles the boundardy betweent he concepts of org learning and org change. This study approaches org learning and org change as two distinct concepts, whilc may or may not be related. Villinger (1996) is cited as making a similar distinction: "Learning in orgs does not equal change in orgs" (p. 185). Viewing change as a neutral term, and associating learnign with the positiv connotation of improvement. The	Transformative and Double loop learning. Deep learning; Adult learning theory; Transformative learning. Belief that the historical emphasis on behavioral change as an indicator of transformative learning minimizes the value to be gained by siply being aware of on'es assumpsions, mental models, and frmaes of reference. Conscious recognition is the first step in recognizing one's propensities; the potential for change follows. Perahps, it is this "behavirol change" characteristic that will come to define	Organizational Learning. the extent literature is reviewed and a theoretical framework is developed. In general, it uncovered key elements of a path or process of "learning from experience" at an organizational level. This was investigated looking in two directions. First there is learning that occurs because the experience of individuals is somehow evidenced at the organizational level. And second, it describes how knowledge that has been created in the firm, learned from experience, is transferred to other domains and change tasks. These findings will be related to	Performance and Personality. In order to examine the relationships aong personality, job performance, feedback and participation in developmental prevams, it is first necessary to discuss the development and contribution of two existing models, which prompted the prsent study. First, served as a framework of performance dimensions that were noted as improtant factors in managerial development (McCauley, et al 1989). Second, proposed by Conway (2000), was a revision of McCauley model and incorporated personality correlates in addition to performance measures. Three constructs included are Respect for Self and Others, Adaptability, and Molding a Team, Conway's secondary goal was to determine the motivational precursors of perf dev constructs by examinging correlations with personality variables. Thus, a major	Trust. Model of Trust in Organizations: trust a a multidimensional construct involving both cognitive and affecective components. The researchers proposed trust is comprised of three factros: ability (extent to which manager is perceived to have skills to allow others to be influenced by him or her), integrity (perception that th anager adheres to a set o fprinciples that the employee finds acceptable) and benevolence (extent to which a manger is perceived as being concerned (with individual employee's interests and development, Ability captures a cognitive component, benevolence captures and affective component, while integrity may be viewed as involving both.	Instructional Technology, intrinsic motivation, and social cognitive theories - the theory and practice of design, development, utilization, manngement and evaluation of processes and resources for learning (Seels & Richey, 1994). Both teng methods were based on three behavioral objectives that correlated to the three core skills taught in the training course. Training content was aligned with the three objectives and skills, and learning activities were linked to the learner's real world environemin and were also directly aligned with the training's objectives and content. Positive reinforcement was also used to increase learner confidence during the learning process. Research has shwon that	Group Dynamics and experiential learning. This study is moted in the model of Lewin (1947) and in concepts at the core of classical theory of organizational development that integrtes transformative education (Boyd & meyers, 1988) and recognizes that th estruggle involved in workign through ambiguities and paradoxes is the source of personal growth and an integrative personality. Specifically, theories of group dynamics and experiential education supported this study. Highlighing the research of group dynamict is the complexity, authority, and change in xperiential groups, particularly when these processes center on the individual and group process. Psychodynamic theory and open systems theory provide the underpinnings for this study. Systems theory perspective is provided bythe applicatio of an open system to the social structure of the group--the subunits of the human system form interdependent	Organizational Learning; Complex adaptive systems. OL focus was on Situated Learning (a key construct in OL), which is to say, activity, context, and culture are interdependent. OL lens was juxtaposed with a view of the org as a complex adaptive system as a means of explaining the results of the intervention. Within CAS, the focus was on a specific form -punctuated equilibrium, which was used to explain the behavioral changes that occurred. The multi-facted and heterogeneous nature of an org as a social system makes sub-cultures almost guaranteed. Not only do work groups have	Theoretical basis for mentoring--Social learning theory posits that people learn from observing other people; but not just observation alone--it must be imitated and reinforced. Social learning theory can be used as the groundwork for developing mentoring relationships or systems that lead to planned org change. People can acquire knowedge, skills, strtegies, beliefs, attitudes by observing and imitating models. Bandura (1976) broubt social learning theory from a bhcaviorist orientation and focused more on the cognitive processes involved in the observation than on the behavior. He observed that one could learn form observation without having to imitate. His triadic recirocality described the relationship between bahvior, person	Experiential and Adult learning Dewey - adult learning grounded in experience coupled with the process of reflective thinking (intra-personal communication), thereby enhancing knowledge and its application. This inclusional philosophy of education provides the participant with some degree of autonomy and influence over what, when and how learning occurs. NTL embraced this philophy and focused it on the filed of experiential ed, group dynamics, adn adult learning theory, OD and teams. NTL popularized the training group ((t-group) in teh form of sensitivity training. Ed Schein adn Warren Bennis also reported on the use of experiential ed methods through the use of the group methodology called T-groups in affecting personal and org growth in organizations. Argyris described the functions of the t-group for the executive	Adult learning. Conceptual framework consists of the constructs in the study and their relationship. How Action learning percets relates to adult learning theory is on construct for analysis. Application in an online environemtn introduces the construct of technology. The intended audience, management, introduces a third construct for analysis.	Adult Learning Theory	Evaluation (levels). Holton (1996) challenges researcher so design an aproach to evaluation that would consider measuring the different levels of the evaluation (Kirkpatricks 4 levels) simultaneously. Holton argues that the relationships betweent he current four levels are structural and not linear and that the interpretation of the relationships between and among levels is important in determing the impact o the trining program on org performance. This type of evaluation would be considered level V evaluation (Phillips, 1996). Dissertation identifies the relationships between management development and org performance, as well as

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