DEVELOPING A METHODOLOGY FOR TRANSFERRING MANAGEMENT DEVELOPMENT TRAINING FROM THE CLASSROOM INTO THE WORK ENVIRONMENT

BY

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CHAPTER 1

Introduction

> The classroom material and experience was really good and I felt I learned a lot. But once I got back to my job, there was no requirement for me to apply the new skills and knowledge. . . . When I returned to my work area, I got so busy that I never got around to applying what I had learned. . . . I enjoyed the training experience, but when I returned to the work area, there was no method that made it easy for me to try out the new skills. (Three respondents in a Boeing Company survey, 1992)

These comments are indicative of managers who have attended management development training and, upon returning to their work area, encountered barriers to using new knowledge or practicing new skills. As U.S. companies attempt to capture the "new paradigms," become "learning organizations," "empower" their work force, and change "managers into leaders," their challenge is to have managers apply these concepts and new behaviors in the work environment.

Companies in the U.S. are sending an increasing number of managers to training. Additionally, the length of time managers will spend in training, as well as the number of management development programs that are being custom designed and delivered within companies, has also increased (Konarski, 1991). For example, the Department of Labor estimated that U.S. companies spent $30 billion on employee training in 1989, with 90 percent of this training targeted for managers and professionals (Gordon, 1990). In 1990, that figure increased to $45.5 billion (Lee, 1990). Regardless of whether this training was obtained outside a company or designed and delivered by internal sources, the indications are that very little of what is acquired in the classroom is actually transferred into the work environment. A recent study of training in a Fortune 500 company showed that less than 9 percent of the trainees indicated that they used on the job what they had learned in class even though almost 100

percent demonstrated skill and knowledge in classroom tests (Brinkerhoff, 1989).

Research suggests there are a number of impediments to the successful transfer of training in organizations. A survey of top executives by John Kotter (1988) reported four major impediments:

1. Top managers had low levels of involvement.

2. Efforts to improve were centered in upper portions of the organization and resulted in little acceptance by the rest of the organization.

3. Efforts centered on administrative staff, with little participation from production personnel.

4. Too much was expected from the training and results were expected too soon.

In a 1986 study of trainers, John Newstrom identified nine major categories of barriers to transferring training from the classroom to the work environment:

(1) lack of reinforcement from supervisors or peers when returning to the job;

(2) work environment interference such as work schedules, ineffective work processes or inadequate equipment;

(3) an organizational culture that does not support or value learning;

(4) the impracticality of the training program as perceived by the trainees;

(5) the irrelevancy of the training content as perceived by the trainees;

(6) the effort and discomfort that trainees experience with implementing change;

(7) the loss of the inspiration that was provided by the training instructor;

(8) the trainees' perception of the training being poorly designed or delivered; and

(9) peers who pressure trainees to resist change (p. 42).

As a result of these studies, researchers have been prompted to consider strategies and models for improving the transfer of training from the classroom to the work environment. One of the more recent transfer-of-training studies (Broad & Newstrom, 1992) categorized seventy-nine transfer strategies based upon the person responsible for carrying out the strategy and when the training was delivered. These strategies will be discussed further in Chapters 2 and 3.

In the area of K-12 education, proponents of current reform movements have explored the transfer of basic skills and knowledge to more complex applications in a classroom setting (Maeroff, 1991; Wiggins, 1989). The evaluation of this transfer activity has required the development of assessment tools that are an alternative to the traditional pencil-and-paper, multiple-choice tests typically used in schools. Alternative assessments, as they are known, include performance-based measures of a student's ability to demonstrate the transfer of basic skills and knowledge to more complex applications.

With the current focus on transfer-of-training issues in the classroom, the K-12 community is developing ways in which alternative assessments can be integrated into the educational setting. A key attribute of alternative assessments is the continuum of behavior descriptions (rubrics) that cover the expected range of students' proficiencies for accomplishing a task (O'Neil, 1994).

Performance-based assessments and rubrics are used within the K-12 system to *assess* transfer in a classroom setting. There appears to be a potential business application of rubrics to assist in the transfer of management development training from the classroom to the work environment.

Description of the Study

The major purpose of this study is to investigate the use of alternative assessment concepts as an aid in the transfer of management development training from the classroom to the business setting. The researcher explored the feasibility of adapting some of the K-12 alternative assessment methods being developed as aids in the transfer of training to adult learners in the business setting. The researcher proposed the use of continuum of behavior descriptions to be used in conjunction with a validation process as a technique for aiding the transfer of management development training from the classroom into the work environment.

Research Questions

This study considered the following research questions:

1. How can the use of rubrics aid in the transfer of management development training to the workplace?

2. How can a validation process be incorporated to aid in this transfer of management development training to the workplace?

Significance of the Study

This study has relevance to any training organization charged with the delivery of management development curricula. Instructors can benefit by being cognizant of effective transfer-of-training strategies when developing and delivering courses. Managers themselves can benefit from seeing the direct application of skills in the work environment. Companies struggling with limited resources can potentially use the findings in this study to utilize their training dollars better. This study contributes to the body of knowledge about performance-based assessments and their applicability to management development courses.

Definition of Terms

Alternative assessment: assessments of student learning that are an alternative to the traditional standardized, pencil-and-paper, multiple-choice testing. Worthen (1993) identified "direct assessment," "authentic assessment," "performance assessment," and "alternative assessment" (p. 445) as synonymous terms to describe alternatives to standardized tests.

Apprenticeship: a system of education and job training by which important practical and valuable information is transferred from one generation to the next (Rorabaugh, 1986, p. vii).

Assessment center: a controlled environment away from the work area where assessments of a management candidate's performance are judged by a pool of staff psychologists and managers who have been assigned as observers. The results are used to predict a candidate's future success as a manager (Bass, 1990, p. 872).

Behaviorally anchored rating scales (BARS): graphic rating scales with a continuum of specific behavior descriptions attached at specific points as determined by a consensus of those familiar with the job in question (Kreitner & Kinicki, 1992, p. 486).

Classroom setting: a location, usually away from the work environment, where training activities take place.

In-house training: training activities that are designed, developed, and delivered by organizations within a company.

Management development: the total long-term and on-the-job educational process (Bass, 1990, p. 845).

Rubrics: a continuum of specific behavioral descriptions for different levels of performance expectations.

Training activities: activities, most often in a classroom setting, which focus on learning the skills, knowledge, and attitudes

required initially to perform a job or task or to improve upon the performance of a current job or task (Nadler & Wiggs, 1986, p. 5).

Transfer of training: "that experience or performance on one task [that] influences performance on some subsequent task" (Ellis, 1965, p. 3). According to Reese (1968), transfer of training is based on the "occurrence of an influence rather than to the sources or cause of the influence" (p. 13). Defined in psychological terms, transfer of training is the "influence of previous experiences on current performance" (Underwood, 1949 p. 637).

Validation: the process of corroborating that an action or behavior has occurred.

Work environment: the place where organizational work is performed. For a manager, the work environment is where one works and leads others.

Scope of the Study

This dissertation examines the effect of using rubrics in conjunction with a validation process as a technique for aiding the transfer of management development training from the classroom into the work environment. Over 650 managers from the Operations Organization of the Everett Division of the Boeing Commercial Airplane Group were involved in the study. These managers had attended a custom-designed and in-house developed/delivered management development training course that used the rubrics and validation process. A sample of managers was surveyed to obtain their perceptions regarding the use of rubrics and the validation process as compared to previous experiences or barriers they may have encountered when trying to apply classroom learning in the work environment.

Limitations of the Study

There are several limitations to this study. The first is that data were collected from managers from one manufacturing company and,

based on the design of this study, cannot be generalized to other companies. A second limitation is that the results of the study were not separated by levels of management; consequently, it was not possible to determine whether the level of management within the organizational structure makes a difference in the ease of transferring management development training to the work environment.

Overview of Dissertation

The purpose of the study, research questions, definition of terms, scope of the study, procedures, and limitations of the study have been discussed in Chapter 1. Chapter 2 presents a review of the literature in the following areas: (1) historical methods of transferring skills and knowledge, (2) transfer-of-training theories, (3) barriers to the transfer of training, (4) transfer strategies used to overcome barriers, (5) alternatives to "traditional" assessments, and (6) the mechanics of rubrics.

Chapter 3 describes the methods used for the subject selection, the organizational (Boeing) surveys of managers, the company-sponsored management assessment and management guidelines, the background for the management development course and the content of Survey I, the rubric development, the validation process, development of the survey instruments, and the data collection process. Chapter 4 contains an analysis of the data, and Chapter 5 concludes the study with a discussion of the findings and recommendations for future research.

CHAPTER 2

Review of Literature

The purpose of this chapter is to review the work done in the area of transfer of training and to examine the newly expanding interest in alternative assessments. This chapter is divided into four sections. The first section--historical background--discusses three methods of preparing individuals for jobs: master/apprenticeships, vocational technical schools, and management training. The second section discusses types of instructional interventions and the capacity of each to transfer learning into the work environment. The third section investigates transfer of training from three perspectives: transfer of training theories, barriers to transfer of training, and strategies to overcome those barriers. The fourth and last section addresses training assessment research in two areas: (1) alternatives to "traditional" methods of assessment that are being experimented with in a number of K-12 school systems, and (2) the mechanics of developing and using rubrics in alternative assessments. Chapter 2 closes by adjusting the focus on the need for better transfer of training in management development training--establishing the connection between current research and the purpose of this study.

Historical Background

The historical background of training individuals in the skills needed to perform work-related tasks will be discussed in terms of three types of training: (1) master/apprenticeships used from the Middle Ages through the American Revolution, (2) vocational technical schools that were common between the American Revolution and the Civil War, and (3) management training in the twentieth century.

Master/Apprenticeship

The oldest educational interventions or means for transferring learning from one person to the next were based on one-to-one

instruction, or tutoring (Vázquez-Abad & Winer, 1992, p. 673). In the Middle Ages, most work was done by hand by craftsmen, and their craft was taught through a hierarchy: The lowest position was that of the apprentice; the next level, journeyman; the highest level, master. The new apprentice sought to learn his trade well enough so that he might be hired as a journeyman, gain some experience, save some money, and then set up a shop as a master (Hilton, 1973; Rorabaugh, 1986).

Since the Middle Ages, apprenticeships have been a traditional phase in the life cycle, and they were widely sanctioned by both custom and law. Artisans of each craft belonged to organized guilds composed of both masters and journeymen to protect the interests of all members of the craft. Guilds controlled the admission of apprentices, thereby creating a closed labor market that, in turn, kept wages high. The quality of work was monitored and the quality of apprentice training was controlled. Before an English apprentice could be admitted formally to guild membership as a journeyman, he had to produce a masterpiece worthy of a master craftsman.

The concept of apprenticeship was carried from England into the American colonies, but with no guilds. In addition, there were no guarantees that the apprentice would be trained in the trade, and the apprentice was not required to produce a masterpiece (Rorabaugh, 1986).

Despite the rather loose structure of the apprenticeship system in this country, it served several important functions in colonial America: (1) It was a system of education and job training by which important practical and valuable information was transferred from one generation to the next; (2) it was a mechanism by which youths could model themselves on socially approved adults; (3) it was an institution devised to ensure proper moral development through the master's fatherly responsibility for the behavior of his apprentice; and, (4) it was a means of social control imposed upon potentially disruptive

male adolescents. In short, it provided a safe passage from childhood to adulthood in psychological, social, and economic terms for a large number of people over a long period of time (Rorabaugh, 1986).

The master was the equivalent of today's manager. However, the power of the master's position was based more on this individual's technical knowledge than on his ability to manage others. In addition to having technical expertise, the master was responsible for the training, coaching, and nurturing of the apprentices and journeymen. Masters were expected to rule with a strict and steady hand in exercising authority, especially over apprentices who became vicious or disobedient (Rorabaugh, 1986, p. 44).

From the period of the American Revolution to the Civil War, the craft apprentice gradually disappeared due to the introduction of factories as a means of producing goods. This "decay of apprenticeship as an institution for the transfer of knowledge from generation to generation" (Rorabaugh, 1986, p. 188) resulted in the move of technical training from apprenticeships to vocational/technical schools in response to the needs of industry (Vázquez-Abad & Winer, 1992). The movement to factory production maintained some aspects of the master-apprentice relationship in that the position of manager continued to be filled based on technical expertise, not on the ability to manage people (Taylor, 1911). However, the emerging industrial economy developed a new set of terminology to describe these relationships. "Masters" became "employers" and "apprentices" became "employees" (Rorabaugh, 1986, p. 135).

Management Training

It wasn't until the twentieth century that the need for training managers was acknowledged. Revans' (1980) study of the work environment in the 1930s English factories noted that "managerial action may be improved by practical experience supported by theoretical analysis of on-the-job learning" (p. 37). In his book, General and Industrial

Management, Fayol (1949) presented the most classic description of the functions of managers as planning, organizing, commanding, and controlling. This functional framework was the foundation for most management education and training (Carroll & Gillen, 1987).

Numerous studies have revealed that managerial knowledge, skills, and abilities can be learned (Campbell, 1971; Wexley & Baldwin, 1986a). Although executive and management training was first introduced in 1919, it was not until the 1950s that growth in employee training programs occurred, led by companies like General Electric, AT&T, IBM, and International Harvester (Eurich, 1985, p. 24).

Industry in the '50s required better training practices to remain competitive as well as innovative (Berger, Dertouzos, Lester, Solow, & Thurow, 1989; Reich, 1989). These training practices appeared to focus on learning and the individual's need to cope with complex tasks (Vázquez-Abad & Winer, 1992). There was also a demand for graduates of business schools to be better prepared to implement business strategies and company objectives (Bolt, 1985).

In 1983 and again in 1986, Bolt (1987) surveyed the CEOs of twenty Fortune 500 companies to identify management trends. His surveys found that management development was increasingly perceived as a strategy to improve organizational effectiveness and competitiveness (p. 6). His findings were supported by other research suggesting that management development programs were consciously being designed to assist in the implementation of corporate strategies (Keys & Wolfe, 1988). Having recognized this vital connection, companies soon began to link their business objectives to management training. For example, in 1983, Tektronix, an Oregon-based manufacturer of electronic and computer graphics products, implemented a two-year training program that linked company objectives to management training (Cohn, 1988, p. 18).

Since the early 1950s, assessment centers have been a popular method for selecting, developing, and promoting managerial personnel (Thornton & Byham, 1982). Assessment centers were intended to be predictive and not necessarily used for training delivery. The assessment center model was first developed by Murray while doing research at Harvard Psychological Clinic (Bray, 1985). His goal was to develop a model that would predict those individuals who would be the most successful managers. Businesses currently use the assessment center technique to (1) provide feedback to managers as they prepare their self-development plans, (2) identify candidates for fast-track programs, and (3) help in organizational planning and development (Sackett & Ryan, 1985, pp. 21-25).

One of the better longitudinal research studies of the use of assessment centers to predict management success by providing developmental education was the AT&T Management Progress Study (MPS) originated by Bell Systems in 1956 (Schaie, 1983). The twenty-year longitudinal design began with 422 new managers attending an assessment center for three and one-half days. Every five years additional data were gathered. Of the two populations in the study, one comprised male college graduates hired as management trainees, and the other comprised men who had not graduated from college and had risen to management positions prior to their thirty-second birthday. The study showed a high correlation between the assessment center's predictions of male's success and the individual's subsequent success as a manager within the company. After twenty years of using the assessment center model, individuals at AT&T who had been identified as having high potential to be successful managers were, indeed, successful (Schaie, 1983, p. 311).

According to a number of studies (Bares & Banks, 1985; Bolt, 1987; Saari, Johnson, McLaughlin, & Zimmerle, 1988), American companies' future training needs fall into the following categories:

(1) communication skills,

(2) managing human performance,

(3) productivity improvement,

(4) building organizational culture,

(5) leadership, and

(6) global business issues.

"The modern workplace calls for increasingly sophisticated problem-solving skills and for the retrieval and application of large amounts of information, often in apparently dissimilar situations" (Vázquez-Abad & Winer, 1992, p. 675).

Instructional Interventions

Many businesses rely on a variety of instructional methods to develop managers. Marsick and Watkins (cited in Sorohan, 1993, p. 52) distinguished between three types of workplace learning: formal, informal, and incidental. "Generally, 20 percent of critical job skills are learned from formal training and education; 80 percent are learned on the job or within organizational systems" (Garavaglia, 1993, p. 68). Formal learning is usually classroom-based and highly structured. Informal learning occurs when a person decides he or she needs to know something in order to accomplish a task and then takes steps to learn it. Incidental learning takes place in the course of doing work. Marsick and Watkins suggested that 90 percent of work-place learning is informal or incidental. Trainers cannot predesign informal or incidental learning, but they can enhance these kinds of learning by training workers in the skills of "proactivity," "critical reflection," and "creativity" (cited in Sorohan, 1993, p. 52). Campbell (1971) identified twenty-two distinct training methods applicable to management development. His research showed that 75-90 percent of training programs used on-the-job training, job rotation, and conferences and lectures.

On-the-job training is an effective teaching tool that has wide support in management research (Gabarro, 1985; Lowy, Kelleher, & Finestone, 1986; McCauley, 1986; Wexley & Baldwin, 1986b). The importance of a successful on-the-job experience early in a manager's career has been widely documented (McCauley, 1986, p. 3). The longitudinal study at AT&T demonstrated that managers who experienced positive on-the-job experiences were found to have a broader outlook and to have developed increased interpersonal skills (Schaie, 1983).

New models for on-the-job learning are developed on the principle that one learns by doing. Morgan and Ramirez (1983) used on-the-job experiences to develop the process they defined as "action learning" (p. 12), which is based on the idea that managers learn better by doing. In action learning, real problems generated by management are acted upon in conjunction with traditional classroom instruction (Raelin & LeBien, 1993). The link between work and learning has developed a renewed interest in the apprenticeship model. Many on-the-job learning activities resemble apprenticeships (Sorohan, 1993, p. 52). The resulting benefits include opportunities to practice and transfer training experiences, a process which seems to stimulate some genuine intellectual curiosity (Raelin & LeBien, 1993).

The third most used instructional intervention is job rotation. Job rotation, moving from one job to another, appears to be an essential component in developing effective managers. Experience gained through job rotation was considered by CEOs to be an important factor in their management development (Gabarro, 1985; Kotter, 1988; McCauley, 1986).

Both on-the-job and job rotation training methods require the manager to be in the work environment, whereas the lecture and conference method of training takes place in the classroom. Classroom instruction has been, and still is, one of the most predominant forms of instruction. It is a format familiar to all students, instructors,

and employers. Classroom instruction has two distinct attributes: First, it consists of teaching groups of people a particular topic or group of topics or some specified skill or group of skills; second, it requires the physical separation of the classroom from the workplace (Yelon, 1992, p. 383). In addition, classroom instruction has the economic benefit of affecting many students at once (Gage & Berliner, 1988).

Classroom instruction uses the lecture format which commonly falls under two models: information presentation and simulations (Burke & Day, 1986; Campbell, 1971; McArdle, 1989; Wexley & Baldwin, 1986b). Information presentation is often in the form of a lecture. Simulations consist of students "role-playing" the parts of a contrived situation. Criticisms of simulations are based on the fact that simplified abstractions of reality create distortions and are not meaningful experiences (Vázquez-Abad & Winer, 1992, p. 677).

Recent instructional interventions are moving away from being technology centered and toward being more learner centered, with the individual being the center of the learning environment (Vázquez-Abad & Winer, 1992). Bowsher (1989) noted a trend toward more integration of training with on-the-job activities. The traditional concept of instructional intervention has to be expanded to encompass where the learning takes place. This learning environment includes all of the physical, human, and contextual elements that may influence the trainee's learning and subsequent performance (Vázquez-Abad & Winer, 1992). "We should no longer think of designing instructional interventions but of creating learner-centered learning environments" (1992, p. 684).

As with any instructional intervention, the unique nature of the adult learner must be acknowledged when designing learner-centered training activities. In his book, The Adult Learner: A Neglected Species, Knowles (1978) outlined some of the characteristics that are

unique to adult learners, including the learner's need to be seen by others as capable of self-direction. According to Knowles, the implications for management development curricula include recognizing the need for

(1) a climate of openness and respect,

(2) involving learners in evaluating their own progress,

(3) more experiential learning and direction in how to learn from life experiences,

(4) a clearer definition of the competencies necessary for occupational roles,

(5) problem-centered learning with the acceptance of making mistakes,

(6) opportunities to apply and try out learning quickly and with feedback, and

(7) freedom for the learner to decide when he or she is ready to learn (Knowles, 1978, pp. 184-185).

The challenge is to design instructional interventions that incorporate transfer of training theories to help managers apply their learning in the work environment.

Transfer of Training

The following section will discuss transfer of training theories, barriers to transfer of training, and strategies to overcome those barriers.

Transfer Theories

Until recently, training was seen as involving the transfer of expertise from one individual to another (Ryder, 1989). The definition of transfer of training has changed over time as researchers have focused on the topic. In 1949, Underwood defined transfer in psychological terms to be the "influence of previous experiences on current performance" (p. 637). Reese (1968) suggested that Underwood's definition referred to the "occurrence of an influence rather than to

the sources or cause of the influence" (p. 13). Henry Ellis (1965) defined transfer of learning as "that experience or performance on one task (that) influences performance on some subsequent task" (p. 3). Baldwin and Ford (1988) defined transfer of training in terms of two conditions of transfer: (1) the maintenance of learned material over time, and (2) the generalization of learned material (p. 21). Generalization refers to the extent to which knowledge, skills, and attitudes acquired in training are applied to different tasks or to settings beyond the training context (Adams, 1987). Broad and Newstrom (1992) defined transfer of training as "the effective and continuing application, by trainees to their jobs, of the knowledge and skill gained--both on and off the job" (p. 7).

Most early studies of learning were conducted in the classroom, they were considered nonanalytic (Underwood, 1957), and they focused on whether or not transfer occurred in the classroom (Ellis, 1964). This early research on transfer of training focused on the gross effects of practice with one task on another and emphasized teaching methods and the belief in formal discipline (Thorndike & Woodworth, 1901). Early studies of training transfer typically concentrated on improving the design of the training content by

(1) using identical stimulus-response elements in both the training and transfer environments (Underwood, 1951);

(2) teaching general principles underlying the training content (McGehee & Thayer, 1961);

(3) presenting relevant training in multiple ways (Ellis, 1965); and

(4) using various conditions of practice such as feedback and overlearning (McGehee & Thayer, 1961; Naylor & Briggs, 1963; Wexley & Thornton, 1972). All of these early studies demonstrated that the design of the initial training content can affect the transfer process (Gist, Bavetta, & Stevens, 1990).

Many educational and training programs are based on the assumption that what is taught in the classroom will transfer to new situations (Ellis, 1965, p. 5). A long-held view of many educators was the doctrine of formal discipline which contended that the mind consisted of several faculties such as memory, reasoning, judgment, and attention and that these faculties could be strengthened by studying certain kinds of subject matter. This view tended to assume that transfer was widespread and automatic (pp. 62-63). The doctrine of formal discipline came under attack around the 1900s.

Much of the present knowledge of transfer of learning was derived from studies involving simple motor or verbal skills training (Adams, 1987; Baldwin & Ford, 1988). Limited data are available about which particular training methods facilitate transfer of training for complex tasks, especially those involving interpersonal communication (Gist et al., 1990).

Transfer of learning is best understood in terms of the way it is measured. Thorndike and Woodworth's (1901) study concluded that transfer of training was limited to those situations in which the two tasks contained "identical elements" (p. 251). This theory of identical elements was challenged by those who argued that some complex experiences could not be reduced to simple elements. Judd suggested that the important condition for transfer was that the student be able to abstract general rules or principles. According to the theory of generalization, a student generalizes his experiences from one situation and applies them to another (1908). This theory had the advantage of recognizing that transfer is not an automatic process and that students must be given practice in transfer strategies (Ellis, 1965).

During the 1930s, the trend in research was toward laboratory studies emphasizing more analytical approaches in transfer of learning designs and was generally aimed at why transfer occurs (Ellis, 1965).

By the late '50s and early '60s, psychologists were forced to reexamine their carefully controlled and systematic approaches to the study of the learning process and instead to respond to educators' concerns about the usefulness and applicability of learning to educational problems. Ellis's work in the '60s suggested that transfer of learning could take three different forms:

(1) positive transfer, in which performance on one task can aid performance on another task;

(2) negative transfer, in which performance on one task may inhibit performance on another task; and

(3) zero transfer, in which there may be no effect of one task on another (p. 3).

Butterfield and Nelson (1989) expanded the concept of negative transfer to include the inappropriate application of knowledge and skills.

An interesting recent focus of research has been on learning how to think, or metacognition. Researchers in the field of cognitive psychology study the way that mental processes determine external behavior. There are three trends of research in this area: why people learn, how people learn, and learning how to think (Vázquez-Abad & Winer, 1992, p. 681). The third trend is of particular importance to the current study because of its impact as a strategy on transfer of training or applying learning in new or novel situations. Researchers believe that the best prediction of what people will do comes from knowledge about the interaction between internal cognitive processes and external environment conditions (Clark, 1992). Metacognitive skills have been shown to be teachable and to facilitate knowledge access and skill transfer (Redding, 1990, p. 35). Transfer of training to the job is one of the currently popular topics in cognitive research (Clark, 1992).

More recently, studies have emerged in two areas that focus on promoting trainee self-directed behavior as a means of facilitating transfer of training:

self-management (Frayne & Latham, 1987; Kanfer, 1970; Kanfer & Singer, 1991; Latham & Frayne, 1989; Marx, 1982), and

goal-setting (Russell, Wexley, & Hunter, 1984; Wexley & Baldwin, 1986b; Wexley & Nemeroff, 1975). These approaches can be used to augment existing training programs without requiring changes to the instructional content (Gist et al., 1990).

Studies of self-management training began as a method for the reduction of addictive behaviors. Kanfer developed a program that taught trainees to

(1) develop a description of the problem,

(2) identify conditions that prompt and maintain the problem behaviors,

(3) set specific, difficult goals that could overcome the problems,

(4) monitor ways that the environment facilitated or hindered goal attainment, and

(5) identify and administer *reinforcers* for working toward the goals or *punishers* for failing to work toward the goals (Kanfer, 1970; Kanfer & Singer, 1991).

These self-management techniques have now been generalized to studying the transfer of training in work settings. Frayne and Latham (1987), using self-management training with unionized government workers to increase their attendance at the work site, found significant increases in attendance among self-management trainees when compared to the attendance of an untrained control group.

Goal setting is the second approach to promoting self-directed behavior as a means of facilitating transfer of training. In a goal-setting study of hospital supervisors, Wexley and Nemeroff (1975)

found that those using an assigned goal-setting approach were significantly better at applying learned skills than was a control group for which no goals had been assigned. However, a meta-analysis by Wood, Mento and Locke (1987) showed that as tasks become more complex, goal setting has a weaker effect on performance. Goals may focus on the final outcome without addressing the process necessary to achieve the outcome. Kanfer and Ackerman's (1989) work suggested that the translation of goals into performance requires a self-regulatory process which utilizes cognitive resources that are different from those dedicated to performing the task itself. If a person's cognitive resources are directed toward the self-regulation necessary for goal attainment rather than toward the demands of complex task performance, his performance may suffer (1989). Their finding suggests that the use of behavioral checklists might better concentrate the cognitive energies on the performance of the task.

In a 1990 study comparing goal-setting and self-management techniques in terms of their effectiveness in facilitating transfer of training, Gist et al. found that *self-management* trainees exhibited higher rates of skill generalization and higher overall performance levels on the transfer task than did *goal-setting* trainees.

Transfer of training studies now are focusing on conditions that use "near" and "far" transfer of knowledge (Clark, 1992, p. 690). Laker (1990) used the distinction of near and far transfer to identify the extent to which trainees could apply training to situations that were very similar to those experienced during the training experience (p. 209).

Near transfer knowledge is acquired through the practice of procedural knowledge in a training setting that mirrors the application setting (Clark, 1992). The success of near transfer is dependent on how closely the training experience resembles routine uses of knowledge on the job (Laker, 1990).

Far transfer is the extent that trainees can creatively apply training to situations that are different from the one experienced during the training (Laker, 1990, p. 209). Far transfer is developed when the acquisition of concepts and principles is tied to the creation and use of analogies to solve problems. There is evidence that most creative insights in science and mathematics have occurred when people working with multiple concepts and principles used analogies to solve problems (Clark, 1992). Recent research on far transfer of learning and problem solving suggests, for example, that managers must constantly edit their own performance to fit novel problems (Clark, Blake, & Knostman, 1989).

In general, a greater degree of positive transfer is obtained when the learning is near in similarity to the application (Ellis, 1965, p. 16). However, Clark (1992) found that when individuals are trained to be proficient in near transfer (job-specific performance), they are less able to make creative adjustments in their performance to solve novel problems or to accommodate unanticipated changes. In other words, one's constant practice of a skill for similar types of problems tends to inhibit creativity. He also found the converse to be true: Teaching for far transfer by assigning individuals to problems and settings that were constantly changing inhibited their practical performance related to any specific problem or setting. For this reason, Clark suggested that training interventions be developed purposely to include training and practice in both types of transfer. Near transfer requires many opportunities to work on the same types of problems in order to develop practical skills. Far transfer requires practice on the greatest possible variety of problems (1992).

A number of studies suggest the following factors to be influential in the transfer of training:

(1) time interval elapsing between tasks;

(2) degree of original-task learning;

(3) variety of previous tasks;

(4) complexity or difficulty of task (Ellis, 1965);

(5) learner intelligence and motivation (Ellis, 1965);

(6) perceived relevance to the job at hand; and

(7) rebellion against authority (Vázquez-Abad & Winer, 1992).

In spite of all the research on transfer of training, there are still major concerns, especially in business, regarding the effectiveness of training programs. Bolt's (1987) surveys of twenty Fortune 500 companies found that significant sums of money were being directed toward the training of managers. In 1987, American companies budgeted $32 billion for formal training programs for their employees. A great majority of those being trained were middle or upper-level managers (Lee, 1987). However, it is estimated that only 10 percent of this investment results in behavioral change at the trainees' worksite (Georgenson, 1982). Given the poor financial return reported on training investment, "When a company is cutting costs, senior managers can start to view training as a frivolous expense" (Garavaglia, 1993, p. 63). A comprehensive study conducted by Baldwin and Ford (1988) found the following:

> There is a growing recognition of a "transfer problem" in organizational training today. It is estimated that while American industries annually spend up to $100 billion on training and development, not more than 10% of these expenditures actually result in transfer to the job. . . . Researchers have similarly concluded that much of the training conducted in organizations fails to transfer to the work setting. (p. 63)

Broad and Newstrom (1992) found that 40 percent of skills learned in management development training are transferred immediately, 25 percent remain after six months, and only 15 percent remain a year later. Given what appears to be a general consensus that transfer of training is a problem, attention will now be focused on barriers that can influence the degree to which training is transferred to the workplace.

Barriers to Transfer of Training

There have been two relevant studies on barriers to the transfer of training. In 1988, John Kotter surveyed the perceptions of top executives to identify the factors that frequently inhibited the success of training and development efforts to improve the performance of managers. His findings suggested that training barriers of all kinds may occur relatively often in organizations and that those barriers represent obstacles to change. The four major factors inhibiting success were as follows:

1. There was a lack of involvement by top management.
2. New efforts to improve were too centered in the top ranks of the organization.
3. New efforts to improve employee behavior were centered on administrative staff, with insufficient participation from production personnel.
4. Expectations from the training were often too unrealistic, with too much being expected too soon.

Kotter concluded that many firms have many practices that are less than adequate to support the need to attract, retain, develop, and motivate a sufficient leadership capacity in management (pp. 112-113).

In 1986, John Newstrom conducted a two-stage study of transfer barriers as perceived by trainers. In stage one, trainers were asked to identify the major impediments to successful transfer of training. The results were classified into nine categories and then given to another group of trainers who were asked to rank order the categories, (1 = greatest barrier; 9 = lowest barrier). Lack of reinforcement on the job was ranked as the greatest transfer of training barrier. Table 1 presents the results of that study.

Table 1

Trainers' Rank Ordering of Barriers to Transfer of Training

Rank	Barrier
1	Lack of reinforcement on the job
2	Interference from immediate (work) environment
3	Nonsupportive organizational culture
4	Trainees' perception of impractical training programs
5	Trainees' perception of irrelevant training content
6	Trainees' discomfort with change and associated effort
7	Separation from inspiration or support of the trainer
8	Trainees' perception of poorly designed/delivered training
9	Pressure from peers to resist change

Source: Table created from information found in J. W. Newstrom, "Leveraging Management Development through the Management of Transfer," Journal of Management Development 5, no. 5: 33-45.

In the analysis of barriers to transfer, Broad and Newstrom (1992) determined that the barriers could occur or be initiated in one or more of three time periods: before, during, or after the training event. One conclusion that emerged from their analysis of timing was that an "organization cannot wait until after a training program is over to address the transfer-of-training problem" (p. 21). Vázquez-Abad and Winer (1992) also noted that "because of the integration of the learning environment into the work environment, it will be necessary to participate in the process of creating these systems from a much earlier point in the process than has usually been the case until now" (p. 684).

Broad and Newstrom also noted that transfer barriers could be caused by or under the control of one or more shareholders: the trainee, the trainer, or the manager. All organizational aspects, such as culture, were considered to be within the control of managers (1992). Parry (1990) categorized three sets of factors--personal,

instructional, and organizational--that could help or hinder the transfer of learning from the classroom to the job.

By combining the time dimension with the shareholder dimension, Broad and Newstrom developed a 3x3 transfer matrix (Figure 1) to show the nine possible combinations of timing and shareholders.

TIME PERIODS

		Before	During	After
ROLE-PLAYERS	Manager			
	Trainer			
	Trainee			

Figure 1

The Transfer Matrix: Nine Possible Role/Time Combinations

Source: M. L. Broad and J. W. Newstrom, Transfer of Training: Action-packed Strategies to Ensure High Payoff from Training Investments (ERIC, ED 366 712), p. 52.

Broad and Newstrom proposed that a "transfer partnership" be developed between the managers, trainers, and trainees (p. 12). Each shareholder plays a critical role in the transfer of learning from the classroom to the work environment. The trainees receive training, education, and development designed to improve organizational functioning and productivity. Trainers manage the design and delivery of learning experiences. Managers support learning and application on the job.

The identification of transfer barriers prompted research in the development of transfer strategies that could reduce or mitigate the impact of those barriers. These strategies will be discussed next.

Transfer Strategies

Researchers have focused on three approaches to facilitate the transfer of training:

(1) preparing individuals for training (i.e., pretraining),

(2) improving the design of the training content, and

(3) providing instruction on how to maintain and generalize training content after it has been learned (i.e., posttraining). A number of research studies have focused on pre-training strategies for facilitating training transfer, such as discussions with one's boss (Huczynski & Lewis, 1980), skills assessments (Noe & Schmitt, 1986), and written announcements (Hicks & Klimoski, 1987).

Fleishman, Harris, and Burtt (1955) conducted the first study suggesting that a supportive climate is a factor in the transfer of learning to the job situation. They found that on-the-job consistency and desired performance was demonstrated by trainees who had a supervisor who modeled the expected behaviors. Over the years other authors (Goldstein, 1986; Marx, 1982; McGehee & Thayer, 1961; Mosel, 1957) found that a supportive organizational climate aided in the transfer of learning from the classroom to the job. In 1986, Goldstein suggested that because a supportive organizational transfer climate is such a critical element, it should be examined as part of any needs assessment.

In Karl and Ungsrithong's 1992 study of pre-training strategies, two control groups were used: (1) students provided with an *optimistic* preview of training, and (2) students provided with a *realistic* view of training (i.e., one which provided the pros and cons of the training. When comparing the manner in which the students in each of these groups responded to the particular pre-training strategy used, Karl and Ungsrithong found that providing an *optimistic* previewing of the training resulted in (1) more positive outcome expectations, (2) greater motivation to learn, (3) positive reactions to training, (4)

greater transfer of learning, and (5) more positive attitudes toward using the skills presented in the training.

In the area of improving the design of the transfer content, Ellis (1965) identified five strategies to help educators teach for transfer that were limited to things the instructor could do during the training.

> 1. Maximize the similarity between teaching and the ultimate testing situation.
>
> 2. Provide adequate experience with the original task.
>
> 3. Provide for a variety of examples when teaching concepts and principles.
>
> 4. Label or identify important features of a task.
>
> 5. Make sure that general principles are understood before expecting much transfer. (pp. 70-72)

Other studies have also focused on the impact of training design (McGehee & Thayer, 1961; Wexley & Thornton, 1972).

Studies of post-training strategies included research on relapse prevention (Marx, 1982; Wexley & Baldwin, 1986b), goal setting (Wexley & Nemeroff, 1975), and self-management training (Gist et al. 1990). Many transfer of training studies have focused on the relationship between (a) the characteristics of training programs and of individual learners and (b) learning and job performance. Rouiller and Goldstein (1993) investigated how the characteristics of the job situation would affect the transferability of training onto the job. In an empirical study of a large franchise that owned fast-food restaurants, they found that the transfer climate of the work situation affected the degree to which learned behavior was transferred onto the actual job.

Although his work is grounded more in case studies than in empirical studies, Analoui (1994) offered the suggestion that attempts to increase transfer should include attention to social as well as technical issues in the work environment by improving socialization both during and after training. For example, he recommends that both

trainees and supervisors attend periodic transfer-related meetings to set objectives regarding trainees' on-the-job progress.

In a recent study, Werner, O'Leary-Kelly, Baldwin, and Wexley (1994) studied the effects of pre- and post-training interventions on 150 university students who were given behavior-modeling training in assertiveness. The pre-training intervention consisted of discussions of situations where trainees could have acted more assertively and how such training could benefit trainees' future careers. The post-training intervention consisted of assigned behavior goals and activities checklists to be completed within the following four weeks. Their results suggested that the *post-training* intervention had more effect on retention of the learned material than did the pre-training intervention. They concluded that "adding a relatively brief goal-setting intervention to an existing behavior-modeling training program led to a sizable increase in learning retention by trainees, as well as moderate behavioral change" (p. 181). All of these studies have demonstrated that the transfer of training can be increased by using strategies before, during, and after training (Gradous, 1991).

Broad and Newstrom (1992) reviewed the literature on transfer strategies and compiled a comprehensive list of seventy-nine transfer strategies to be used by managers, trainers, and trainees before, during, and after a training experience (Appendix K). Although each strategy was attached to one cell of their 3x3 transfer matrix (Figure 1), many of the strategies could easily overlap into other time frames as well as into other roles. These transfer strategies were offered as items to be incorporated into the design and development of training programs to maximize transfer from the classroom into the work environment.

The research on transfer strategies offers many alternatives for the development of more meaningful instructional interventions. Because training programs often produce change when measured within

the training environment yet fail to result in significant change when trainees return to the job (Leifer & Newstrom, 1980, p. 42), attention must be focused on the kinds of assessments that are used in those two environments.

Training Assessment

The final section of the literature review will present research in training assessment in two areas: (1) alternatives to traditional assessment, and (2) the development and use of rubrics.

Alternatives to Traditional

Training Assessment

The use of assessments to measure demonstrated performance dates as far back as 210 B.C. in China where assessments were used "to select virtuous men for civil service" (Madaus & Tan, 1993, p. 55). For most of the twentieth century, standardized, multiple-choice tests have served as the primary method for assessing how successful schools have been in educating youth. As scores on standardized tests began to be used for making crucial decisions, however, the limitations of such tests, and their ability to assess only certain outcomes, became an issue (Worthen, 1993).

Hoffman (1983) and Houts (1977) foreshadowed the criticism of multiple-choice testing and the movement toward the alternative techniques that gained popularity in the 1990s. Few current movements have caught the attention of educators as quickly as the move toward more direct assessment of student performance (Worthen, 1993). Twenty-five states have passed or are considering passing legislation mandating the use of direct assessment of student performance as the means of determining how well schools, districts, and state education systems are performing (Herman, 1991).

"Direct assessment," "authentic assessment," "performance assessment," and "alternative assessment" are terms that have been used to describe alternatives to standardized tests. In essence, they

have two characteristics: First, they are seen as alternatives to traditional multiple-choice, standardized achievement tests; second, they all directly examine a student's performance on significant tasks that are relevant to life outside of school (Worthen, 1993, p. 445). This movement has been fueled by the need for students to move from proficiency in *selected*-response tests, where correct answers are recognized, to proficiency in *constructed*-response tests, where correct responses are generated (Popham, 1993).

The formats used for authentic assessments range from the simplest constructed-response test to comprehensive demonstrations or collections of large bodies of work over a period of time. Common forms of constructed-response assessments include (1) essays, (2) oral discourse, (3) exhibitions, (4) experiments, and (5) portfolios (Feuer & Fulton, 1993, p. 478).

Constructed-response tests can be successfully completed in a variety of ways. Consequently, student performance must be judged by one or more persons who are guided by well-defined criteria. This approach is similar to that used for judging performances in gymnastics or diving competitions.

"Performance tasks are the backbone of a performance assessment system" (Marzano, Pickering, & McTighe, 1993, p. 30). Marzano et al. identified two basic characteristics of a performance task:

1. Performance tasks require an extended period of time to complete.

2. Performance tasks require students to construct new knowledge (p. 26).

Research suggests that most classroom tasks can be completed in a single thirty- to sixty-minute period (Doyle, 1983; Fisher & Hiebert, 1988). However, research and theory also indicate that the "deepest" types of learning occur when learners have the time to engage themselves in increasingly more sophisticated "layers" of

investigation and explanation of content, with each layer bringing new insights and new learnings (Jaques, 1985). Consequently, an effective performance task requires that students work on it over an extended period of time (Marzano et al., 1993).

Most traditional tests that students are asked to complete contain questions that have predetermined "right" answers. In these kinds of tests, there is little room for diversity of response (Marzano et al., 1993). For the most effective learning to occur, students must be allowed to articulate a unique position and defend it (Vosniadou & Brewer, 1987). Therefore, an effective performance task requires that students construct new knowledge (Marzano et al., 1993).

Baron (1991) identified five characteristics of an "authentic" performance task:

1. The task is meaningful both to the instructor and to students.

2. The task is framed by the student.

3. The task requires the student to locate and analyze information as well as draw conclusions.

4. The task requires students to communicate results clearly.

5. The task requires students to work together for at least part of the task (p. 306).

A scoring rubric is used to guide human judgment when scoring a performance task. A rubric consists of a fixed scale and a list of characteristics describing performance for each of the points on the scale. The scale usually runs from one to four, with four describing the highest level of performance and one describing the lowest level of performance. In a four-point rubric, level three is usually considered the accepted level of performance (Marzano et al., 1993). A Behaviorally Anchored Rating Scale (BARS) is an example of a rubric (Kreitner & Kinicki, 1992, p. 486). These are graphic rating scales

with behavior descriptions attached at specific points as determined by a consensus of those familiar with the job in question.

The Development and Use of Rubrics

Developing rubrics can be quite time-consuming (Marzano et al., 1993). Popham (1993) found that training is needed to gain competence in both the preparation and the use of rubrics. He also noted that more time is required to develop and administer the performance task and then to score the task using the rubric than is needed in traditional testing. Kreitner and Kinicki (1992) found that the midscale anchors are difficult to specify, that rubrics developed for one situation are not applicable for other situations, and that the development of rubrics is costly. Landy and Farr (1980) concluded: "The major objection to the BARS currently is whether the ratings that these scales produce are so error free that they justify the cost of scale development" (p. 83). The use of performance tasks and rubrics also impacts the way content is delivered. "There really is a profound difference between teaching students to recognize correct answers and teaching them to generate them" (Popham, 1993, p. 472).

On the other hand, Kreitner and Kinicki suggested that the use of rubrics brought rating scales to life for appraisers and reduced common sources of errors such as halo effects, leniency, and central tendencies (p. 487). Because rubrics are presented to students along with the performance task, the rubrics can promote learning by offering clear performance targets (Marzano et al., 1993). An additional benefit would be the specificity of feedback that could be provided to students on their performance (Reilly, Henry, & Smither, 1990).

The problem of accurately judging performance tasks has been experienced in assessment centers used by businesses. Reilly et al. found that there were three problems connected with the validity of assessment center constructs: poor construct definitions, poor

operational definitions (failure of exercises to yield relevant behaviors), and the cognitive demands placed on assessors (p. 83). The process of evaluating a participant during a simulation or task requires assessors to observe, recall, categorize, and evaluate behavior on multiple dimensions, a process which strains the human information-processing capacity (Gaugler & Thornton, 1989).

In their study of assessment centers, Reilly et al. (1990) found that the use of behavior checklists might reduce the cognitive demands on the assessors by focusing their attention on specific sets of relevant behaviors and could reduce the scoring of assessment performance to a nearly objective level (p. 81). A checklist could also provide cues to guide the assessor's recall of the behaviors observed. Reilly et al. suggested that "behaviorally based operational definitions and clear linkages to the job performance domain are essential steps" (p. 83). Sackett (1987) suggested that inter-assessor reliability can be improved by the scoring and training of assessors. The reduction of variation between assessors is key to determining the validity of an assessment.

Summary

Traditionally, transfer of training studies have focused on the transferring of training from the teacher to the student within the learning environment. Recently, this focus has shifted to the transferring of learning from the learning environment to application in the work setting. In addition, many barriers to the transfer of training have been identified. Current research has identified six categories of strategies that can be used to overcome transfer of training barriers: strategies that can be influenced by managers, trainers, and trainees and strategies that can be used before, during, and after the training intervention. The most promising training design should attempt to use strategies from all six categories.

Rubrics have been used to guide performance in K-12 settings, but this methodology has had little use in the business setting. This study explores the use of rubrics as a strategy for transferring management development training from the classroom into the work environment.

CHAPTER 3

Methodology

The purpose of this study is to investigate (1) how the use of rubrics can aid in the transfer of management development training to the workplace, and (2) how a validation process can be incorporated to aid in the transfer of management development training to the workplace.

This study consisted of three major steps for the researcher:

(1) having access to a management development course,

(2) designing a transfer methodology that was either an extension of an existing course or was developed as an integral part of a new course, and

(3) collecting and analyzing perceptions of people affected by the use of the transfer methodology.

This study took place in the operations organization of the Boeing Everett Division, which is a major division of the Boeing Commercial Airplane Group located in Everett, Washington. The operations organization has the following components: Manufacturing, Manufacturing Support, Tooling, Planning, Industrial Engineering, Planning, Safety, and Training. At the beginning of this study in 1994, the operations organization employed approximately 650 managers. Figure 2 presents a graphical picture of the organizational structure of the Everett Operations Division within the Boeing Commercial Airplane Group.

Management Development Course

In response to the concerns about management effectiveness voiced by both management and hourly employees in a 1992 Boeing Company opinion survey, a new course for managers was developed for the Operations Organization at the Everett Division. The new course, called Operations Management Skills Enhancement, consisted of three

one-week sessions--Session I, Session II, and Session III--each designed to address two strands: (1) the *business* decisions and (2) the *personal* decisions that affect the effectiveness and efficiency of a manager. The business decisions strand covered many of the business and organizational policies that the company already had in place. The personal decisions strand, on the other hand, addressed management behaviors over which the manager had some level of control and influence. This strand was based on a list of behavior expectations that the Boeing Company had developed for its managers entitled the Boeing Management Attributes (Appendix A).

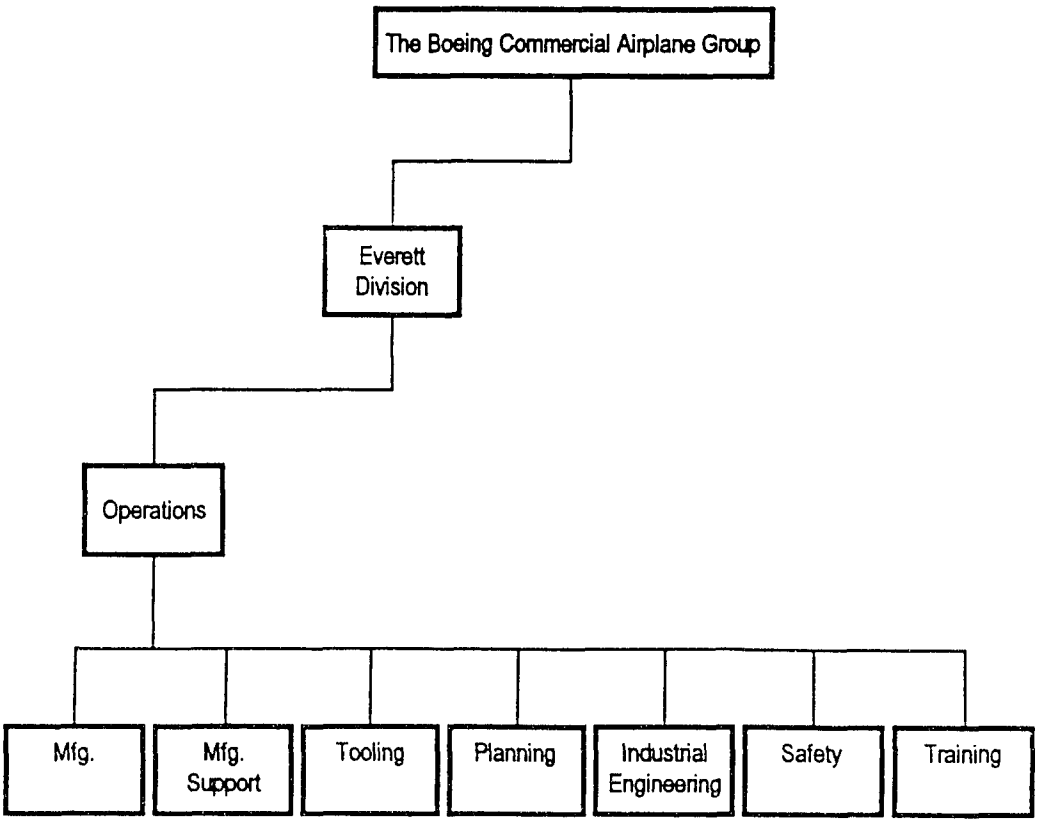

Figure 2

Organizational Structure of the Everett Operations Division, Boeing Commercial Airplane Group

This study focused only on Session I of the Operations Management Skills Enhancement course, which had a theme of "The Manager as a Collaborative Leader." This week-long session had explicit participant outcomes (Appendix B) that addressed both the business and the personal strands. It was designed to included instruction and practice on a selected number of management attributes with the expectation that they would be transferred into the work setting.

Transfer Methodology

This study used the new management development course as an opportunity to integrate a methodology to effect the transfer of learning to the work setting. The transfer methodology consisted of three parts:

(1) a set of performance tasks, called *fieldwork*, that provided the "incentive" for participants to apply classroom learnings when they returned to the work setting,

(2) a set of *rubrics* that provided descriptions of behavioral expectations for each fieldwork task, and

(3) a framework for *validating* the fieldwork.

Fieldwork

Three management attributes were picked from the list of Boeing Management Attributes based on their ability to support the session's theme of "The Manager as a Collaborative Leader." These attributes were

(1) shares information, listens to other, and maintains objectivity;

(2) provides timely communication on results and processes; and

(3) treats people with respect.

The demonstration of these selected management attributes in the workplace became the fieldwork tasks. For each of the three selected management attributes, two fieldwork tasks were constructed to be

completed in the workplace for a total of six fieldwork tasks (Appendix C) for Session I.

Rubric Development

Each fieldwork task had a list of behavior descriptions, or rubrics, specifically developed to aid in the transfer of the management attribute from the classroom to the work setting. Table 2 presents an example of a four-level rubric to aid in the following discussion of rubric levels.

Table 2

A Four-Level Rubric

Level	Behavior description
4	Demonstrates mastery of important skills, performs without error and with little to no conscious effort.
3	Carries out important skills without significant error and with relative ease.
2	Makes a number of errors when performing skills but can complete a rough approximation
1	Makes critical errors when performing important skills.

Source: Adapted from R. J. Marzano, D. Pickering, and J. McTighe, Assessing Student Outcomes: Performance Assessment Using the Dimensions of Learning Model (Alexandria, VA: Association for Supervision and Curriculum Development, 1993), 66.

In a four-level rubric, the behavior description of Level 3 is usually targeted as the acceptable level of performance (Aurora, 1992; Herman, Aschbacher, & Winters, 1992). However, describing the acceptable level of performance can be very subjective and time consuming. Fortunately, the Boeing Company had developed the Boeing Management Attributes Reference Guide (Appendix D) which suggested examples of acceptable behaviors. To develop a rubric for a particular management attribute, the behavior description from the reference guide was used

as the description of acceptable management behavior for Level 3. This description then became the basis for writing behavior descriptions for Levels 1, 2, and 4, resulting in a four-level task-specific rubric for each of the three selected management attributes. Then, the task-specific rubrics were rewritten in the third person for use by an observer and in the first person for use by the participants (Appendix E).

Validation Framework

Validation is the process of corroborating that an action or behavior has occurred. A validation framework was developed based on techniques of clinical supervision (Acheson & Gall, 1987; Cogan, 1973) which allowed for corroboration of the fieldwork task by both the participant and an observer.

The process of validation consisted of three steps: (1) observer validation (2) self-validation by the participant, and (3) a post-observation briefing between the observer and the participant.

Observer validation. The previously mentioned observer rubrics were placed on an observer validation checklist that included instructions for use, the observer rubrics, and a signature box. An observer validation checklist was prepared for each of the six fieldwork tasks. Although the observer categories (supervisor, peer, subordinate, customer) were predetermined for each fieldwork task, the participant was free to choose by name any observer who fit that predetermined category descriptor. As the participant demonstrated a selected management attribute, the observer used the observer validation checklist to rate the participant's level of performance (Appendix F). As a point of clarification, the customer observer was an "internal customer"--that is, another Boeing employee.

Participant self-validation. The participant rubrics were placed on a self-validation checklist that included instructions for use, the participant rubrics, and a signature box. A self-validation

checklist was prepared for each of the six fieldwork tasks. After the participant demonstrated a selected management attribute, he or she completed the self-validation checklist to rate his or her own level of performance (Appendix F).

Post-observation briefing. After the observer and self-validations were completed, the participant and the observer met to discuss the fieldwork task, compare checklists, and reach an agreement on the level of performance demonstrated. This participant-led conversation focused on behavior demonstrated, or not demonstrated, during the task (Appendix F). Then, both validation forms were signed and the original copy was filed with the each participant's training record. If performance was validated at lower than Level 3, the participant could repeat the fieldwork until the acceptable level was achieved (Level 3). Participants were given up to six months to complete their six fieldwork tasks. Completion of both the classroom and fieldwork portions were required in order to gained credit for Session I. Completion of Session I was a prerequisite for attending Session II of the three-session Operations Management Skills Enhancement course mentioned at the beginning of this chapter.

To facilitate participant understanding and use of this methodology, classroom instruction included an explanation of the design of rubrics, the construction of the rubrics using the Boeing Management Attributes and the Boeing Management Attributes Reference Guide, and a practice exercise where each participant had the opportunity to use both the observer validation checklist and the self-validation checklist. In addition, participants were given a step-by-step process for completing the fieldwork tasks when returning to the work environment (Appendix G).

Data Collection

The target audience of this study was those managers who had completed Session I of the Operations Management Skills Enhancement

course. Survey questionnaires were developed to gather the perceptions of participants and of observers from the four groups--(1) supervisors, (2) peers, (3) subordinates, and (4) customers--regarding the use of the transfer methodology.

Survey Tools

The surveys, which were designed to be self-reporting and self-administered, contained seventeen items in two categories: twelve fieldwork and five performance. Both categories used a Likert scale for the selection of responses. After the surveys were field-tested and reviewed, a number of items were deleted and the wording was changed to achieve better clarity or to reflect the respondents' viewpoints. In addition, the observer's survey was redesigned to include four variations--one to match each of the four perspectives (supervisor, peer, subordinate, customer) that an observer could have used. Observers were asked to complete the survey from the specific perspective that was *identified on their survey* because each observer could have been asked to observe fieldwork tasks for many participants and from more than one of the four perspectives. Five variations of the survey were eventually developed: one for the participant and one for each of the four observer subgroups (Appendix H). The fieldwork and performance items on the survey were designed to capture specific kinds of perceptions, to be discussed next.

Fieldwork items. Fieldwork items 1a, 1b, 2a, and 2b were intended to capture levels of knowledge about using a scale of behaviors that described expected levels of performance. Items 3, 4, and 5, focused on the use of the fieldwork tasks as a structure for applying learned behaviors in the work setting. Items 6, 7, and 8 looked at the use of the fieldwork tasks as a method for providing feedback about demonstrated performance. Items 9 and 10 addressed the use of the fieldwork as a way to rate performance.

Performance items. Performance items 1, 2, 3, and 4 were intended to capture perceptions of improved performance in specific content areas of the course. The fifth item focused on overall performance improvement.

Subject Selection

The selection of the *participants* to be surveyed was based on their completion of Session I (i.e., all Session I classroom and fieldwork had to have been validated at least at Level 3). After twelve months of delivery of Session I, 462 participants had begun training and were in various stages of completing the fieldwork; 253 participants had actually completed Session I. It was these 253 individuals who were sent surveys.

The selection of the *observers* to be surveyed was based on a random selection from the files of the 462 participants within the Operations Division who had either partially or fully completed the Session 1 classroom and fieldwork. Because the design of the fieldwork for Session 1 had predetermined observer categories that were linked to the participant based on organizational hierarchy--supervisors, peers, subordinates, and customers--the participants were required to identify observers within these categories. As a result, the observer population selected for the survey was constrained and not randomly distributed.

An alphabetized filing system was used to store folders containing the participant fieldwork tasks. A list of observers for each of the four predetermined categories was developed by randomly selecting *participant* folders--that is, starting at the beginning of the alphabetized folders, the first folder to be selected was the fifth folder. Subsequently, every fifth folder was selected until the four observer subgroups were equally represented in the selection--that is, if a selected folder did not supply the name of an observer from the requisite perspective, the next fifth folder was selected,

and so on. This process was followed until 160 observers had been selected to receive the survey--forty for each observer subgroup.

Survey Process

All 253 participants and 160 observers were mailed survey packets consisting of the appropriate survey form (Appendix H) and a cover letter (Appendix I). Within seven days, a reminder letter was mailed (Appendix J). All mailing was done within the company mailing system, thus facilitating a quick turn-around time. After the surveys were returned, the responses were entered into a spreadsheet to be analyzed later. Surveys returned by the participants numbered 125; those returned by the observers, 67: (supervisors--14, peers--20, subordinates--15, and customers--18), for an overall return rate (combining the two groups) of 46.5 percent (Table 3, Chapter 4).

Chapter 4, to follow, will present an analysis of the data generated from the participant and observer surveys.

CHAPTER 4

Analysis and Interpretation of Data

Introduction

This chapter analyzes the data collected from the participant and observer surveys between December 1994 and March 1995. The survey (Appendix H) had a total of seventeen items: twelve items related to fieldwork (designated as Items F1 through F10), and five items related to management performance (designated as Items P1 through P5). Data were collected from two perspectives: that of the *participant* and that of an *observer*. The data for the observers were analyzed further as an overall observer group and as four individual subgroups: supervisor, peer, subordinate, and customer. The customer observer was an "internal customer"--that is, another Boeing employee.

Statistical analysis was conducted using a cumulative logit row effect model to account for the ordinality of the response scale. All analyses were performed using the SAS statistical software package. All levels of significance were at the 0.05 level. The statistical data are arrayed in tables in order to emphasize key findings which relate to the questions under study. The statistically significant probabilities are bolded in the tables.

There were 192 responses to the written survey (Table 3): 125 responses were from managers who had completed both classroom and fieldwork portions of Session I, and the remaining 67 responses were from people who observed managers perform their fieldwork tasks: 14 supervisor responses, 20 peer responses, 15 subordinate responses, and 18 customer responses. Three surveys were returned blank: one from an observer who was no longer with the company and two from participants who were no longer in management and chose not to respond.

Table 3

Survey Response Rate

Survey respondents	Surveys mailed	Surveys returned	
		Number	Percent
Participants	253	125	49.4
Observers	160	67	41.9
Supervisors	40	14	35.0
Peers	40	20	50.0
Subordinates	40	15	37.5
Customers	40	18	45.0

Frequency and Percentages of Responses

Fieldwork Items F1 through F10 had three possible responses to reflect the participants' and observers' perceptions regarding the degree to which the various fieldwork tasks and the subsequent feedback had contributed to the participants' demonstration of the specified Boeing Management Attributes:

1 = very little
2 = somewhat
3 = a lot

Performance Items P1 through P5 had five possible responses to reflect the participants' and observers' perceptions on the degree to which they felt that there was a change in management performance in specific content areas (P1-P4) or in overall management performance (P5). There was an additional response for observers: 6 = do not know. Table 4 displays the responses for each item from all surveys. Relevant subsets of this table will accompany the subsequent analysis of the survey data for greater ease in presenting that analysis.

1 = 0%
2 = 25%
3 = 50%
4 = 75%
5 = 100%
6 = do not know

Table 4

Frequency and Percentages of Participants' and Observers' Responses by Survey Item

Survey Item	Participants		Observers		Observer Groupings							
					Supervisors		Peers		Subordinates		Customers	
	#	%	#	%	#	%	#	%	#	%	#	%
F1a												
R1	42	33.6	31	46.3	5	7.46	13	19.40	5	7.46	8	11.94
R2	68	54.4	30	44.8	7	10.45	6	8.96	9	13.43	8	11.94
R3	15	12.0	6	9.0	2	2.99	1	1.49	1	1.49	2	2.99
F1b												
R1	5	4.0	3	4.5	2	2.99	0	0.00	1	1.49	0	0.00
R2	59	47.2	38	56.7	8	11.94	10	14.93	9	13.43	11	16.42
R3	61	48.8	26	38.8	4	5.97	10	14.93	5	7.46	7	10.45
F2a												
R1	39	31.5	24	35.8	3	4.48	8	11.94	6	8.96	7	10.45
R2	67	54.0	35	52.2	8	11.94	12	17.91	6	8.96	8	13.43
R3	18	14.5	8	11.9	3	4.48	0	0.00	3	4.48	2	2.99
F2b												
R1	6	4.8	4	6.0	2	2.99	0	0.00	1	1.49	1	1.49
R2	64	51.2	36	53.7	7	10.45	12	17.91	9	13.43	8	11.94
R3	55	44.0	27	40.3	5	7.46	8	11.94	5	7.46	9	13.43
F3												
R1	34	27.4	10	14.9	3	4.48	4	5.97	2	2.99	1	1.49
R2	65	52.4	33	49.3	9	13.43	9	13.43	5	7.46	10	14.93
R3	25	20.2	24	35.8	2	2.99	7	10.45	7	11.94	7	10.45
F4												
R1	32	25.6	14	20.9	4	5.97	5	7.46	3	4.48	2	2.99
R2	54	43.2	23	34.3	4	5.97	7	10.45	5	7.46	7	10.45
R3	39	31.2	30	44.8	6	8.96	8	11.94	7	10.45	9	13.43
F5												
R1	28	22.4	14	20.9	3	4.48	4	5.97	3	4.48	4	5.97
R2	56	44.8	34	50.7	8	11.94	11	16.42	7	10.45	8	11.94
R3	41	32.8	19	28.4	3	4.48	5	7.46	5	7.46	6	8.96

Table 4, Continued

Frequency and Percentages of Participants' and Observers' Responses by Survey Item

Survey Item	Participants		Observers		Observer Groupings							
					Supervisors		Peers		Subordinates		Customers	
	#	%	#	%	#	%	#	%	#	%	#	%
F6												
R1	29	23.2	10	14.9	3	4.48	4	5.97	2	2.99	1	1.49
R2	61	48.8	32	47.8	7	10.45	9	13.43	9	13.43	7	10.45
R3	35	28.0	25	37.3	4	5.97	7	10.45	4	5.97	10	14.93
F7												
R1	26	20.8	12	17.9	3	4.48	2	2.99	3	4.48	4	5.97
R2	60	48.0	32	47.8	7	10.45	12	17.91	8	11.94	5	7.46
R3	39	31.2	23	34.3	4	5.97	6	8.96	4	5.97	9	13.43
F8												
R1	29	23.2	8	12.1	3	4.55	2	3.03	2	3.03	1	1.52
R2	56	44.8	38	57.5	6	9.09	16	24.24	7	10.61	9	13.64
R3	40	32.0	20	30.3	5	7.58	2	3.03	6	9.09	7	10.61
F9												
R1	18	14.4	8	12.1	3	4.55	2	3.03	2	3.03	1	1.52
R2	72	57.6	34	51.5	7	10.61	12	18.18	7	10.61	8	12.12
R3	35	28.0	24	36.4	4	6.06	5	7.58	6	9.09	9	13.64
F10												
R1	21	16.9	9	13.4	2	2.99	4	5.97	2	2.99	1	1.49
R2	66	53.2	32	47.8	6	8.96	10	14.93	8	11.94	7	11.94
R3	37	29.8	26	38.8	6	8.96	6	8.96	5	7.46	9	13.43

Table 4, Continued

Frequency and Percentages of Participants' and Observers' Responses by Survey Item

Survey Item	Participants		Observers		Observer Groupings							
					Supervisors		Peers		Subordinates		Customers	
	#	%	#	%	#	%	#	%	#	%	#	%
P1												
R1	17	13.6	10	15.6	2	3.12	2	3.12	5	7.81	1	1.56
R2	42	33.6	24	37.5	5	7.81	10	15.63	3	4.69	6	9.38
R3	34	27.2	17	26.6	5	7.81	4	6.25	2	3.12	6	9.38
R4	26	20.8	6	9.4	1	1.56	2	3.12	3	4.69	0	0.00
R5	6	4.8	3	4.7	0	0.00	1	1.56	1	1.56	1	1.56
R6			4	6.2	0	0.00	1	1.56	1	1.56	2	3.12
P2												
R1	15	12.0	12	18.8	3	4.69	3	4.69	5	7.81	1	1.56
R2	39	31.2	21	32.8	4	6.25	7	10.94	6	9.38	4	6.25
R3	37	29.6	16	25.0	4	6.25	7	10.94	0	0.00	5	7.81
R4	26	20.8	8	12.5	2	3.12	1	1.56	2	3.12	3	4.69
R5	8	6.4	4	6.2	0	0.00	1	1.56	2	3.12	1	1.56
R6			3	4.7	0	0.00	1	1.56	0	0.00	2	3.12
P3												
R1	13	10.4	5	7.8	1	1.56	1	1.56	3	4.69	0	0.00
R2	30	24.0	15	23.4	3	4.69	5	7.81	5	7.81	2	3.12
R3	39	31.2	22	34.4	3	4.69	8	12.50	2	3.12	9	14.06
R4	30	24.0	15	23.4	5	7.81	5	7.81	3	4.69	2	3.12
R5	13	10.4	5	7.5	1	1.56	1	1.56	2	3.12	1	1.56
R6			2	3.1	0	0.00	0	0.00	0	0.00	2	3.12
P4												
R1	18	14.4	15	23.4	3	4.69	4	6.25	7	10.94	1	1.56
R2	45	36.0	26	40.6	5	7.81	11	17.19	4	6.25	6	9.38
R3	35	28.0	9	14.1	1	1.56	3	4.69	1	1.56	4	6.25
R4	15	12.0	5	7.8	3	4.69	0	0.00	1	1.56	1	1.56
R5	12	9.6	5	7.8	1	1.56	1	1.56	2	3.12	1	1.56
R6			4	6.2	0	0.00	1	1.56	0	0.00	3	4.69
P5												
R1	12	9.6	9	14.1	2	3.12	2	3.12	5	7.81	0	0.00
R2	46	36.8	25	39.1	5	7.81	10	15.63	5	7.81	5	7.81
R3	32	25.6	14	21.9	3	4.69	4	6.25	0	0.00	7	10.94
R4	26	20.8	10	15.6	3	4.69	3	4.69	3	4.69	1	1.56
R5	9	7.2	4	6.2	0	0.00	1	1.56	2	3.12	1	1.56
R6			2	3.1	0	0.00	0	0.00	0	0.00	2	3.12

Analysis of Responses

A statistical test was conducted on each response for each of the seventeen items to test the probability of different responses being selected between participant and observer (Table 5). Results of this analysis included (1) the fit of the statistical model to the data and (2) the response probabilities for each of the seventeen items. A separate analysis was done for participant versus observer and for the observer subgroups. An analysis of variance table yields the chi-square statistic and significance probability for each item.

Table 5

Probability of Different Responses between Participants and Observers: By Item

	Fit of model (1)		Participant/ observer response (2)		Item (3)	
Survey items	Chi-square	Proba-bility	Chi-square	Proba-bility	Chi-square	Proba-bility
F1a	0.16	0.6912	118.17	**0.0000**	2.82	0.0932
F1b	0.15	0.7008	84.20	**0.0000**	1.61	0.2046
F2a	0.00	0.9515	130.24	**0.0000**	0.49	0.4856
F2b	0.01	0.9069	94.82	**0.0000**	0.29	0.5878
F3	0.00	0.9524	130.17	**0.0000**	7.09	**0.0077**
F4	0.77	0.3804	99.95	**0.0000**	2.70	0.1004
F5	0.55	0.4597	119.73	**0.0000**	0.09	0.7663
F6	0.08	0.7820	123.05	**0.0000**	2.61	0.1061
F7	0.01	0.9160	122.12	**0.0000**	0.31	0.5802
F8	3.46	0.0630	119.26	**0.0000**	0.44	0.5081
F9	0.15	0.6990	136.47	**0.0000**	1.27	0.2592
F10	0.08	0.7789	127.49	**0.0000**	1.56	0.2110
P1	9.91	0.5922	193.48	**0.0000**	1.87	0.1715
P2	0.83	0.8425	195.07	**0.0000**	2.51	0.1130
P3	0.69	0.8749	201.87	**0.0000**	0.00	1.0000
P4	1.95	0.5833	183.27	**0.0000**	4.84	**0.0278**
P5	0.23	0.9733	198.70	**0.0000**	1.45	0.2289

Participant versus

Observer Analysis

In Table 5, the first set of chi-square and probability numbers (1) tests the adequate fit of this model to the data. The operating hypothesis is *Ho: There is a good match between the statistical model and the data*. Because all probabilities for the model are greater than 0.05, the data support the operating hypothesis; the statistical model provides an adequate fit to the data.

The second set of numbers (2) tests for the likelihood that each of the responses for each of the items would be equally selected. The operating hypothesis is *Ho: There is an equal chance that Responses 1, 2, or 3 will be selected*. Because all probabilities are less than 0.05, the data reject the operating hypothesis. Thus, the probabilities of Responses 1, 2, or 3 being selected are not equal. This would be expected of all survey items.

The third set of numbers (3) tests a given item for the likelihood that there was a difference between the participant and the observer responses for each item. The operating hypothesis is *Ho: There is no difference between participant and observer responses*. A look at the probabilities (Table 5) shows that there were two items that had probabilities less than 0.05. Therefore, the data reject the operating hypothesis. Statistically significant differences between the participant and the observer responses existed for survey Items F3 and P4:

F3: The degree to which the fieldwork provided the structure for the manager to practice Boeing Management Attributes in the work setting;

P4: The amount to which management performance has improved by building employee motivation and morale.

To explore the statistically significant differences further, an estimate of the magnitude of the difference between the participant and the observer responses was calculated for the two items (Table 6).

For the *fieldwork* item (F3), a positive estimate suggests that the *participant* is more likely than the observer to select a response of a 3 instead of a 1 or a 2. A negative estimate suggests that the *observer* is more likely than the participant to select a response of a 3 instead of a 1 or a 2. For the *performance* item (P4), a positive estimate suggests that the participant is more likely than the observer to select a *higher* response. A negative estimate suggests that the participant is more likely than the observer to select a *lower* response. The positive and negative estimates in Table 6 are corroborated by the frequency and percentage data from Table 7 (which is a subset of Table 4).

Table 6

Difference of Responses between Participants and Observers: F3 and P4

Survey item	Participant versus observer		
	Chi-square	Probability	Estimate
F3	7.09	**0.0077**	-0.3915
P4	4.84	**0.0278**	0.3183

Table 7

Frequency and Percentages of Participants' and Observers' Responses: F3 and P4 (Subset of Table 4)

Survey item	Response	Participants ** (n=125)		Observers * (n=67)	
		#	%	#	%
F3	R1	34	27.4	10	14.9
	R2	65	52.4	33	49.3
	R3	25	20.2	24	35.8
P4	R1	18	14.4	15	23.4
	R2	45	36.0	26	40.6
	R3	35	28.0	9	14.1
	R4	15	12.0	5	7.8
	R5	12	9.6	5	7.8
	R6	--	--	4	6.2

** F3 had one missing participant response
* P4 had three missing observer responses

For Item F3 (Table 6), the negative estimate (-0.3915) suggests that the observer is more likely than the participant to select a response of a 3 instead of a 1 or a 2. For Item F3, 35.8 percent of observers selected Response 3 (R3) as compared to 20.2 percent of the participants. One possible explanation for this difference is that the current work environment does not typically support a structure for employees to watch managers practicing workplace-related behavior. However, the structure of the fieldwork tasks in this particular study did, in fact, provide employees the opportunity to see managers practice certain management behaviors. Therefore, there was more likelihood of the observers rather than the participants selecting a higher (e.g., R3) response.

For Item P4 in Table 6, the positive estimate (0.3183) suggests that the participant is more likely than the observer to select a higher response. More participants selected the high responses of 3, 4, and 5 (28.0 percent, 12.0 percent, and 9.6 percent, respectively) than did observers (14.1 percent, 7.8 percent, and 7.8 percent, respectively) for Item P4. One possible explanation for this difference is the current psychological environment at Boeing. For the past three years the Boeing Company has had a hiring freeze and has been reducing the size of both the management and the hourly employee populations. This situation could have an effect on the employees' perceptions of management performance in terms of building employee motivation and morale.

Observer Subgroup Analysis

Because of the limited observer subgroup data, the mean response score to each item was used to provide a valid analysis. This analysis also preserves the ordinality of the response scale. An analysis was conducted on the subgroups of observers to test for differences of responses between the observer subgroup members: supervisor, peer, subordinate, and customer (Table 8).

Because all probabilities are greater than 0.05, the data support the operating hypothesis, *Ho: There is no difference between the responses of subgroups of observers.* Regardless of the organizational relationship of the observer to the participant, there were no statistically significant differences between the responses of the subgroups. With this in mind, further analysis of observer data will be confined to the overall group.

Table 8

Probability of Different Responses between Observers: By Subgroups

Survey item	Observer subgroups	
	Chi-square	Probability
F1a	4.36	0.2247
F1b	3.63	0.3038
F2a	3.92	0.2700
F2b	1.54	0.6737
F3	5.17	0.1599
F4	1.31	0.7267
F5	0.35	0.9502
F6	4.92	0.1774
F7	0.98	0.8060
F8	4.71	0.1946
F9	3.28	0.3503
F10	2.89	0.4091
P1	0.33	0.9552
P2	2.71	0.4393
P3	1.23	0.7465
P4	2.81	0.4212
P5	1.45	0.6938

Analysis of Item Groupings

The seventeen survey items were placed into groupings that focused on various topics. Statistical analysis was conducted on the grouped items in order to emphasize key findings which relate to the questions under study. These item groupings are displayed in Table 9.

Statistical analysis was conducted on each of the six item groupings in Table 9 to test the probability of Responses 1, 2, or 3 being selected for items in each grouping. A separate analysis was done for participants, for observers, and for participants versus observers.

Table 9

Breakdown of Survey Items into Six Topic Groups for Subsequent Analysis

Item grouping	Survey items	Topic groups
A	F1a, F1b	Knowledge of how behavior scales could be developed to describe levels of performance
B	F2a, F2b	Knowledge of how to use behavior scales to assess levels of performance
C	F3, F4, F5	Fieldwork tasks as a structure for applying learned behaviors in the work setting.
D	F6, F7, F8	Fieldwork tasks as a method for providing feedback about demonstrated performance
E	F9, F10	Fieldwork tasks as a method to rate performance
F	P1, P2, P3, P4, P5	Participant performance improvements

Participant Analysis

Table 10 shows the probability of participants selecting different responses for items in each grouping. Results of this analysis included (1) the fit of the statistical model to the data, (2) the participant response probabilities for each of the six item groupings, and (3) the items within each grouping.

The first set of chi-square and probability numbers (1) tests the adequate fit of this model to the participant data. The data support the operating hypothesis, *Ho: There is a good match between the statistical model and the data*. Because all probabilities for the model are greater than 0.05, the statistical model provides an adequate fit to the data.

Table 10

Probability of Different Responses between Items for Participants: Item Grouping

Item grouping	Fit of model (1)		Participant response (2)		Item (3)	
	Chi-square	Probability	Chi-square	Probability	Chi-square	Probability
A	1.05	0.3066	133.90	**0.0000**	50.26	**0.0000**
B	1.81	0.1782	143.90	**0.0000**	37.38	**0.0000**
C	2.34	0.3101	231.84	**0.0000**	3.68	0.1590
D	0.43	0.8068	236.75	**0.0000**	0.40	0.8189
E	0.54	0.4622	181.71	**0.0000**	0.00	0.9703
F	9.49	0.6608	654.36	**0.0000**	7.19	0.1264

The second set of numbers (2) tests for the likelihood that each of the responses for each of the items would be equally selected. The data reject the operating hypothesis, *Ho: There is an equal chance that Responses 1, 2, or 3 will be selected.* Because all probabilities are less than 0.05, there is an unequal probability that any response for each item could be selected by the participants.

The third set of numbers (3) tests for the likelihood that there was a difference in participant response between the items within each of the A-F groupings. The data reject the operating hypothesis, *Ho: There is no difference in participant responses between the items within each of the groupings.* Table 17 shows that there were two item groupings that had probabilities less than 0.05. Therefore, statistically significant differences in participant responses exist between the items in Item Groupings A (F1a and F1b) and B (F2a and F2b).

To explore the statistically significant differences further, an estimate of the magnitude of the difference between the items in each grouping was calculated for the two groupings (Table 11). A positive estimate suggests that the first item (F1a) is more likely than the second item (F1b) to have the response of a 3. A negative estimate

suggests that the second item (F1b) is more likely than the first item (F1a) to have a response of a 3.

The estimates in Table 11 are corroborated by the frequency and percentage data in Table 12.

Table 11

Difference of Participant Responses between Items: Item Groupings A and B

Item grouping	Items		
	Chi-square	Probability	Estimate
A	50.26	**0.0000**	-1.0458
B	37.38	**0.0000**	-0.8580

Table 12

Frequency and Percentages of Participants' and Observers' Responses--Item Groupings A and B: F1a, F1b, F2a, and F2b (Subset of Table 4)

Groupings A and B survey items	Response	Participants * (n=125)		Observers (n=67)	
		#	%	#	%
F1a (A)	R1	42	33.6	31	46.3
	R2	68	54.4	30	44.8
	R3	15	12.0	6	9.0
F1b (A)	R1	5	4.0	3	4.5
	R2	59	47.2	38	56.7
	R3	61	48.8	26	38.8
F2a (B)	R1	39	31.5	24	35.8
	R2	67	54.0	35	52.2
	R3	18	14.5	8	11.9
F2b (B)	R1	6	4.8	4	6.0
	R2	64	51.2	36	53.7
	R3	55	44.0	27	40.3

* Item F2a had one missing participant response

Item Grouping A contained survey Items F1a and F1b, which asked participants to compare their pre- and post-Session I levels of knowledge of how behavior scales could be developed.

For Item Grouping A, 48.8 percent of the participants selected a response of 3 for Item F1b as compared to 12.0 percent selecting that same response for Item F1a. This difference would be expected because prior to Session I, participants had little access to the knowledge of how a behavior scale could be developed. After being exposed to the knowledge in class, there would be a corresponding increase in participants' knowledge.

Item Grouping B contained survey Items F2a and F2b which asked participants to compare their pre- and post-Session I levels of knowledge of how to use behavior scales to assess levels of performance.

For Item Grouping B, 44.0 percent of the participants selected a response of 3 for Item F2b as compared to 14.5 percent selecting that same response for Item F2a. This difference would also be expected because prior to Session I, participants had little to no previous experience using rubrics as a scale to assess performance in the work setting. After experiencing the use of a behavior scale, there would be a corresponding increase in participants' knowledge.

Observer Analysis

Table 13 shows the probability of observers selecting different responses for items in each grouping. Results of this analysis included (1) the fit of the statistical model to the data, (2) the observer response probabilities for each of the six item groupings, and (3) the items within each grouping.

The first set of chi-square and probability numbers (1) tests the adequate fit of this model to the observer data. The data support the operating hypothesis, *Ho: There is a good match between the statistical model and the data*. Because all probabilities for the model are greater than 0.05, the statistical model provides an adequate fit to the data.

The second set of numbers (2) tests for the likelihood that each of the responses for each of the items would be equally selected. The

data reject the operating hypothesis, *Ho: There is an equal chance that Responses 1, 2, or 3 will be selected.* Because all probabilities are less than 0.05, there is an unequal probability that any response for each item could be selected by the observers.

Table 13

Probability of Different Responses between Items for Observers: Item Grouping

	Fit of model (1)		Observer response (2)		Item (3)	
Item grp.	Chi-square	Probability	Chi-square	Probability	Chi-square	Probability
A	2.02	0.1553	65.71	**0.0000**	27.71	**0.0000**
B	0.75	0.3852	78.61	**0.0000**	21.61	**0.0000**
C	3.96	0.1380	113.03	**0.0000**	2.09	0.3509
D	1.65	0.4388	129.15	**0.0000**	0.32	0.8517
E	0.17	0.6794	81.74	**0.0000**	0.02	0.8850
F	8.16	0.7729	305.98	**0.0000**	14.10	**0.0070**

The third set of numbers (3) tests for the likelihood that there was a difference in observer responses between the items in the groupings. The data reject the operating hypothesis, *Ho: There is no difference in observer responses between the items in the groupings.* Table 13 shows that there were three item groupings (A, B, and F) that had probabilities less than 0.05. Therefore, statistically significant differences in observer responses exist between the items in Groupings A, B, and F.

To explore the statistically significant differences further, an estimate of the magnitude of the difference between the items in each grouping was calculated for the three groupings (Table 14). For the fieldwork groupings (A and B), a positive estimate suggests that the first item (F1a or F2a, respectively) is more likely than the second item (F1b or F2b, respectively) to have the response of a 3. A negative estimate suggests that the second item (F1b or F2b, respectively)

is more likely than the first item (F1a or F2a, respectively) to have a response of a 3.

Table 14

Difference of Observer Responses between Items: Item Groupings A, B, and F

Item grouping	Items		
	Chi-square	Probability	Estimate
A	27.70	**0.0000**	-1.1149
B	21.61	**0.0000**	-0.9026
F	14.10	**0.0070**	*

* The estimate for Group F items is found in Table 15.

The negative estimates are corroborated by the frequency and percentage data in Table 12. Item Grouping A contained survey items F1a and F1b which asked observers to compare their levels of knowledge of how behavior scales could be developed before and after using the observer fieldwork checklists which described those behavior scales.

For Item Grouping A, 38.8 percent of the observers selected a response of 3 for Item F1b compared to 9.0 percent selecting the same response of 3 for Item F1a. This difference in their responses to these two survey items would be expected because prior to using the observer fieldwork checklists, observers had little access to the knowledge of how a behavior scale could be developed. Their only access would be through any conversations they might have had with the participants they observed as well as any knowledge they may have picked up from actually using the behavior scale during the observation process. Therefore, it would be expected that there would be a an increase in observers' knowledge in this area.

Item Grouping B contained survey items F2a and F2b which asked observers to compare their level of knowledge of how to use behavior scales to assess levels of performance before and after being involved in actually using the observer fieldwork checklists.

For Item Grouping B, 40.3 percent of the observers selected a response of 3 for Item F2b as compared to 11.9 percent selecting that same response for Item F2a. This difference would also be expected because prior to using the observer fieldwork checklists, observers had little to no previous experience using a scale to assess performance in the work setting. After experiencing the use of a behavior scale, there would be a corresponding increase in the observers' knowledge.

Item Grouping F containing performance items also had a probability less than 0.05 which indicated a statistically significant difference in observers' responses between items in this grouping (Table 14). Because the probabilities for Item P1 and Item P2 are greater than 0.05, there is no statistically significant difference in observer responses to these two items. However, for Item P3 and Item P4, there are statistically significant differences in observer responses which are explained by looking at the estimates (Table 15).

Further analysis was conducted by comparing the estimates for the separate items within that item grouping (Table 15). A positive estimate suggests that the item is more likely to have a greater number of high responses (R3, R4, and R5 for observers) than all other items in the grouping. A negative estimate suggests that the item is more likely to have a greater number of low responses (R1 and R2 for observers) than all other items in the grouping.

The positive and negative estimates from Table 15 are corroborated by frequency and percentage data from Table 16.

Table 15

Differences of Observer Responses between Items in Item Grouping F

Group F survey items	Observer responses		
	Chi-square	Probability	Estimate
P1	0.46	0.4983	-0.1419
P2	0.17	0.6843	-0.0838
P3	11.43	**0.0007**	0.7053
P4	5.78	**0.0162**	-0.5101
P5	--	--	-0.0305

Table 16

Frequency and Percentages of Participants' and Observers' Responses: P1, P2, P3, P4, and P5 (Subset of Table 4)

Grouping F survey items	Response	Participants (n=125)		Observers (n=64)	
		#	%	#	%
P1	R1	17	13.6	10	15.6
	R2	42	33.6	24	37.5
	R3	34	27.2	17	26.6
	R4	26	20.8	6	9.4
	R5	6	4.8	3	4.7
	R6	--	--	4	6.2
P2	R1	15	12.0	12	18.8
	R2	39	31.2	21	32.8
	R3	37	29.6	16	25.0
	R4	26	20.8	8	12.5
	R5	8	6.4	4	6.2
	R6	--	--	3	4.7
P3	R1	13	10.4	5	7.8
	R2	30	24.0	15	23.4
	R3	39	31.2	22	34.4
	R4	30	24.0	15	23.4
	R5	13	10.4	5	7.5
	R6	--	--	2	3.1
P4	R1	18	14.4	15	23.4
	R2	45	36.0	26	40.6
	R3	35	28.0	9	14.1
	R4	15	12.0	5	7.8
	R5	12	9.6	5	7.8
	R6	--	--	4	6.2
P5	R1	12	9.6	9	14.1
	R2	46	36.8	25	39.1
	R3	32	25.6	14	21.9
	R4	26	20.8	10	15.6
	R5	9	7.2	4	6.0
	R6	--	--	2	3.1

For Item P3, the positive estimate (0.7053) suggests that it will have a greater number of *high* responses than will the other items in the grouping. Table 16 shows that observers tended to have higher responses (R3, R4) for Item P3 (34.4 percent selecting R3; 23.4 percent selecting R4) than for the other four items in Item Grouping F. For Item P4, the negative estimate (-0.5101) suggests that it will have a greater number of *low* responses than will the other items in the grouping. Table 16 shows that a greater percentage of observers rated Item P4 with low responses (i.e., R1 = 23.4 percent; R2 = 40.6 percent than was the case with the other four items in the F grouping.

Participant versus

Observer Analysis

Next a comparison of responses between participants and observers was conducted on each grouping. Table 17 shows the probability of participants versus observers selecting different responses for items in each grouping. Results of this analysis included (1) the fit of the statistical model to the data, (2) response probabilities for each of the six item groupings, (3) the items in each grouping, and (4) participant versus observer responses for each item in each grouping.

The first set of chi-square and probability numbers (1) tests the adequate fit of this model to the participant data. The data support the operating hypothesis, *Ho: There is a good match between the statistical model and the data.* Because all probabilities for the model are greater than 0.05, the statistical model provides an adequate fit to the data.

The second set of numbers (2) tests for the likelihood that each of the responses for each of the items would be equally selected. The data reject the operating hypothesis, *Ho: There is an equal chance that Responses 1, 2, or 3 will be selected.* Because all probabilities

are less than 0.05, there is an unequal probability that any response for each item could be selected by the observers.

The third set of numbers (3) tests for the likelihood that there was a difference in responses between the items within the groupings. The data reject the operating hypothesis, *Ho: There is no difference in the responses between the items within the groupings.* Table 17 shows that there were three item groupings that had probabilities less than 0.05. Therefore, statistically significant differences exist in the responses between the items in Item Groupings A, B, and F.

The fourth set of numbers (4) tests for the likelihood that there was a difference between the participants' and observers' responses for the items in each grouping. The operating hypothesis is *Ho: There is no difference between the participants' and observers' responses for the items in each grouping.* Table 17 shows that there were three item groupings that had a probability less than 0.05. Therefore, statistically significant differences exist between the participants' and observers' responses to the items in Item Groupings A, C and F.

Table 17

Probability of Different Responses between Items for Participants versus Observers: Item Grouping

	Fit of model (1)		Response (2)		Item (3)		Participant vs. observer (4)	
Item grp.	Chi-square	Proba-bility	Chi-square	Proba-bility	Chi-square	Proba-bility	Chi-square	Proba-bility
A	3.13	0.5265	199.51	**0.0000**	78.07	**0.0000**	4.45	**0.0349**
B	2.60	0.6266	222.48	**0.0000**	58.97	**0.0000**	0.77	0.3798
C	10.33	0.1707	341.34	**0.0000**	1.80	0.4072	4.89	**0.0269**
D	4.23	0.7531	363.98	**0.0000**	0.05	0.9741	2.67	0.1021
E	0.95	0.9177	263.25	**0.0000**	0.00	0.9533	2.84	0.0921
F	21.41	0.9007	925.61	**0.0000**	18.72	**0.0009**	7.83	**0.0051**

To explore the statistically significant differences in responses of these two categories (3 and 4) further, first an estimate of the magnitude of the difference in responses between the items was calculated for Item Groupings A, B, and F; second, an estimate of the magnitude of the difference in *participant versus observer* responses was calculated for Item Groupings A, C and F (Table 18). A *positive estimate* for the *item* category (3) suggests that the first item in the grouping is more likely than the second to have a high percentage of responses of a 3. A *negative* estimate for the *item category* (3) suggests that the second item in the grouping is more likely than the first to have a high percentage of responses of a 3. A *positive* estimate for the *participant versus observer* category (4) suggests that the participant is more likely than the observer to have a response of 3. A *negative* estimate for the *participant versus observer* category (4) suggests that the observer is more likely than the participant to have a response of 3. The positive and negative estimates in Table 18 for Item Grouping A are corroborated by the frequency and percentage data from Table 19.

Table 18

Difference of Participant versus Observer Responses between Items: Item Groupings A, B, C, and F

	Item (1)			Participant versus observer (2)		
Item grp.	Chi-square	Proba-bility	Esti-mate	Chi-square	Proba-bility	Esti-mate
A	78.07	**0.0000**	-1.0692	4.55	**0.0349**	0.2210
B	58.97	**0.0000**	-0.8733	--	--	--
C	--	--	--	4.89	**0.0269**	-0.1828
F	18.71	**0.0009**	*	7.83	**0.0051**	*

* The estimate for Group F items is found in Table 22.

Table 19

Frequency and Percentages of Participants' and Observers' Responses: Item Grouping A--F1a and F1b (Subset of Table 4)

Grouping A survey items	Response	Participants (n=125)		Observers (n=67)	
		#	%	#	%
F1a	R1	42	33.6	31	46.3
	R2	68	54.4	30	44.8
	R3	15	12.0	6	9.0
F1b	R1	5	4.0	3	4.5
	R2	59	47.2	38	56.7
	R3	61	48.8	26	38.8

For Item Grouping A (Table 18), the significant probability for the item category (1) (0.0000) and the negative estimate (-1.0692) suggest that the second item in that grouping (F1b) will have a higher percentage of responses of 3 than will the first item in that grouping (F1a). Table 19 shows that Item F1b did have a higher percentage of R3 responses than did Item F1a for both participants (F1b = 48.8 percent; F1a = 12.0 percent) and observers (F1b = 38.8 percent; F1a = 9.0 percent). In addition, the significant probability (0.0349) for the participant versus observer category (2) and the positive estimate (0.2210) suggest that the participant is more likely than the observer to have a response of a 3 for the two items in Grouping A. In the *participant versus observer* category in Table 19, the participants did have a higher percentage of responses of a 3 for Items F1a and F1b (12.0 percent and 48.8 percent, respectively) than did the observers (9.0 percent and 38.8 percent, respectively).

These differences would be expected because prior to Session I (for participants) and to the use of the fieldwork checklists (for observers), both participants and observers had little access to the behavior scale knowledge. After being exposed to the knowledge of how

a behavior scale could be developed, there would be a corresponding increase in both participants' and observers' knowledge. The higher percentage increase for the participants would be expected due to the participants' involvement in classroom discussions on the development of behavior scales. The observers did not take part in those classroom discussions.

The negative estimate for Item Grouping B (-0.8733) is corroborated by frequency and percentage data from Table 20.

Table 20

Frequency and Percentages of Participants' and Observers' Responses: Item Grouping B--F2a and F2b (Subset of Table 4)

Survey item	Response	Participants * (n=125)		Observers (n=67)	
		#	%	#	%
F2a	R1	39	31.5	24	35.8
	R2	67	54.0	35	52.2
	R3	18	14.5	8	11.9
F2b	R1	6	4.8	4	6.0
	R2	64	51.2	36	53.7
	R3	55	44.0	27	40.3

* F2a had one missing participant response

For Item Grouping B (Table 18), there was a statistically significant difference between the responses to the items (1). The negative estimate (-0.8733) suggests that the second item in that grouping (F2b) will have a higher percentage of responses of 3 than will the first item in that grouping (F2a). Table 20 shows that Item F2b did have a higher percentage of responses of a 3 than did Item F2a for both participants (44.0 percent versus 14.5 percent) and observers (40.3 percent versus 11.9 percent). However, there was no indication of any difference between participants' and observers' responses to these two items. Again, the difference in responses *between* the items would be expected because prior to Session I (for participants) and to

the use of the fieldwork checklists (for observers), both participants and observers had little experience with using the behavior scales. After being exposed to the use of behavior scales, there would be a corresponding increase in both participants' and observers' knowledge. The insignificant difference between participants' and observers' responses for Item Grouping B could be rationalized that the knowledge related to *using* the behavior scale (Group B responses) was easier to obtain than was the knowledge for *developing* the behavior scale (Group A responses).

For Item Grouping C (Table 18), there was a statistically significant difference between the participants' and observers' responses. The negative estimate for *the participant versus observer* category (-0.1828) suggests that the observer is more likely than the participant to have a high percentage of responses of a 3 across all Group C items.

Table 21 shows that across all items in Item Grouping C, the observer tended to have a high percentage of responses of 3 for F3, F4, and F5 (35.8 percent, 44.8 percent, and 28.4 percent, respectively) than did the participants (20.2 percent, 31.2 percent, and 32.8 percent, respectively). Items in Grouping C addressed fieldwork tasks as a structure for applying learned behaviors in the work setting. The tendency for observers to score higher than participants in this grouping would be expected since the current work environment does not typically support a structure for employees to watch managers practicing work-related behaviors. However, the structure of the fieldwork tasks in this particular study did provide employees the opportunity to see managers practice certain management behaviors. Therefore, there was more likelihood of the observers rather than the participants selecting a higher response.

Table 21

Frequency and Percentages of Participants' and Observers' Responses: Item Grouping C--F3, F4, and F5 (Subset of Table 4)

Group C survey items	Response	Participants * (n=125)		Observers (n=67)	
		#	%	#	%
F3	R1	34	27.4	10	14.9
	R2	65	52.4	33	49.3
	R3	25	20.2	24	35.8
F4	R1	32	25.6	14	20.9
	R2	54	43.2	23	34.3
	R3	39	31.2	30	44.8
F5	R1	28	22.4	14	20.9
	R2	56	44.8	34	50.7
	R3	41	32.8	19	28.4

* Item F3 had one missing participant response

Item Grouping F (Table 18) containing the performance items also had a probability less than 0.05. Therefore, further analysis was conducted on the separate items within the item grouping (Table 22). A positive estimate suggests that the item is more likely to have a greater number of *high* responses (R3, R4, and R5 for both participants and observers) than all other items in the grouping. A negative estimate suggests that the item is more likely to have a greater number of *low* responses (R1 and R2 for both participants and observers) than all other items in the grouping. Because the probabilities for Item P1 and Item P2 are greater than 0.05, there is no statistically significant difference in participant versus observer responses for these two items. However, for Item P3 and Item P4, there were statistically significant differences (probabilities of 0.0001 and 0.0084, respectively) in participant versus observer responses which are explained by looking at the estimates.

Table 22

Differences of Participant versus Observer Responses between Items in Item Grouping F

Item grouping	Participant versus observer responses		
	Chi-square	Probability	Estimate
P1	1.25	0.2641	-0.1324
P2	0.03	0.8539	-0.0217
P3	15.28	**0.0001**	0.4620
P4	6.95	**0.0084**	-0.3141
P5	--	--	0.1738

Table 23

Frequency and Percentages of Participants' and Observers' Responses: P1, P2, P3, P4, and P5 (Subset of Table 4)

Group F survey items	Response	Participants (n=125)		Observers (n=64)	
		#	%	#	%
P1	R1	17	13.6	10	15.6
	R2	42	33.6	24	37.5
	R3	34	27.2	17	26.6
	R4	26	20.8	6	9.4
	R5	6	4.8	3	4.7
	R6	--	--	4	6.2
P2	R1	15	12.0	12	18.8
	R2	39	31.2	21	32.8
	R3	37	29.6	16	25.0
	R4	26	20.8	8	12.5
	R5	8	6.4	4	6.2
	R6	--	--	3	4.7
P3	R1	13	10.4	5	7.8
	R2	30	24.0	15	23.4
	R3	39	31.2	22	34.4
	R4	30	24.0	15	23.4
	R5	13	10.4	5	7.5
	R6	--	--	2	3.1
P4	R1	18	14.4	15	23.4
	R2	45	36.0	26	40.6
	R3	35	28.0	9	14.1
	R4	15	12.0	5	7.8
	R5	12	9.6	5	7.8
	R6	--	--	4	6.2
P5	R1	12	9.6	9	14.1
	R2	46	36.8	25	39.1
	R3	32	25.6	14	21.9
	R4	26	20.8	10	15.6
	R5	9	7.2	4	6.0
	R6	--	--	2	3.1

For Item P3, the positive estimate (0.4620) suggests that it will have a greater number of *high* response than will all the other items in the grouping. The positive estimate is corroborated by frequency and percentage data from Table 23 which shows that Item P3 tended to have a greater number of high responses (R3, R4, and R5 for both participants and observers) than for all the other items in Item Grouping F.

For Item P4, the negative estimate (-0.3141) suggests that it will have a greater number of *low* responses than all the other items in the grouping. The negative estimate is corroborated by frequency and percentage data from Table 23 which shows that Item P4 tended to have a greater number of low responses (R1 and R2 for both participants and observers) than for all the other items in Grouping F.

Analysis of Performance

The sixth item grouping (F) contained all survey items related to participant performance improvements: Items P1 through P4 asked participants and observers for their perceptions on the degree to which they felt that there was a change in management performance in specific content areas of the course. Survey Item P5 asked participants and observers for their perceptions of overall management performance.

In order to determine the relationships between items, P1 through P5 were analyzed assuming the responses were continuous. The results of the analysis included (1) the participant versus observer responses, (2) the *participant* responses to P1, P2, P3, and P4 as predictors of P5, (3) the *observer* responses to P1, P2, P3, and P4 as predictors of P5, and (4) the relationship of fieldwork Item Groupings C and D to performance Item P3.

Participant versus Observer

Response Analysis

An *F* test was used to analyze the participants' versus the observers' response to the performance items. Table 24 contains the results of the *F* test.

Table 24

Difference between Participant versus Observer Mean Responses: Participant Performance--P1 through P5

Group F survey items	Participant versus observer responses		
	F value	Probability	Mean response
P1	1.77	0.1894	40.52
P2	2.19	0.1402	42.44
P3	0.08	0.7744	50.41
P4	3.04	0.0830	39.15
P5	1.11	0.2942	43.27

Because the probabilities were all greater than 0.05, there were no statistically significant differences between participant versus observer responses to the performance items. This suggests that the performance survey items were perceived similarly by both participants and observers.

Performance Predictors:

Participant Analysis

A *t* test was used to analyze the extent to which the participants' response to Item P5 was a function of the responses to Items P1, P2, P3, and P4. Table 25 contains the results of the *t* test.

The probability for Item P3 is not statistically significant and contributes the least to affecting Item P5. Item P3 was removed and the analysis was rerun, generating the results in Table 26.

Table 25

Difference between Participant Mean Responses: Participant Performance--P1 through P4

Survey items	Participant responses		
	t value	Probability	Mean response
P1	4.714	**0.0001**	0.3486
P2	3.941	**0.0001**	0.2826
P3	1.482	0.1411	0.0889
P4	4.129	**0.0001**	0.2621

Table 26

Difference between Participant Mean Responses: Participant Performance--P1 through P4 less P3

Survey item	Participant responses		
	t value	Probability	Estimate
P1	5.082	**0.0001**	0.3702
P2	4.491	**0.0001**	0.3114
P4	4.890	**0.0001**	0.2938

Because all probabilities are less than 0.05, all items have an effect on Item P5. The magnitude of the effect is determined by the estimate. For each unit of increase of Item P1, there will be a 0.3702 increase of Item P5. Similarly, for each unit of increase of Items P2 and P4, there will be, respectively, a 0.3114 and 0.2938 increase of Item P5. This analysis suggests that from the participants' perspective, Item P1 has the greatest effect on Item P5.

Performance Predictors:

Observer Analysis

A *t* test was used to analyze the extent to which the observers' response to Item P5 was a function of the responses to Items P1, P2, P3, and P4. Table 27 contains the results of the *t* test.

The probability for Item P2 is least significant and contributes the least to affecting Item P5. Item P2 was removed and the analysis was rerun, generating the results in Table 28.

Table 27

Difference between Observer Mean Responses: Participant Performance--P1 through P4

Survey items	Observer responses		
	t value	Probability	Estimate
P1	2.642	**0.0108**	0.3595
P2	0.796	0.4294	0.1132
P3	3.478	**0.0010**	0.3510
P4	1.854	0.0693	0.2056

Table 28

Difference between Observer Mean Responses: Participant Performance--P1 through P4 less P2

Survey item	Observer responses		
	t value	Probability	Estimate
P1	3.663	**0.0006**	0.4180
P3	3.639	**0.0006**	0.3624
P4	2.711	**0.0090**	0.2529

Because all probabilities are less than 0.05, all items have an effect on Item P5. The magnitude of the effect is determined by the estimate. For each unit of increase of Item P1, there will be a 0.4180 increase of Item P5. Similarly, for each unit of increase of Items P3 and P4, there will be, respectively, a 0.3624 and 0.2529 increase of Item P5. This analysis suggests that from the observers' perspective, Item P1 has the greatest effect on Item P5.

Relationship between Fieldwork and Performance Item

An analysis was conducted using participant responses to test the relationship between specific fieldwork item groupings (C and D) and one of the performance items (P3). An analysis of variance was used assuming the P3 response is continuous and Items F3, F4, F5, F6, F7, and F8 responses are discrete. Item Grouping C contained survey Items F3, F4, and F5 which focused on fieldwork tasks as a structure for applying learned behaviors in the work setting. Item P3 asked about performance improvement in listening effectively and sharing information, which was one of the management behaviors covered and practiced in the classroom. An analysis was conducted to see if there was any significant difference between items in Item Grouping C (structure of the fieldwork) and the performance behavior of listening effectively and sharing information in the work place (Table 29).

Table 29

Difference between Item Grouping C and Item P3

Survey item	*F* value	Probability
F3	0.51	0.6043
F4	1.54	0.2178
F5	4.14	**0.0183**

The probability for Item F3 is least significant and contributes the least to affecting Item P3. Item F3 was removed and the analysis was rerun, generating the results in Table 30.

The probability for Item F4 is least significant and contributes the least to affecting Item P3. Item F4 was removed and the analysis was rerun, generating the results in Table 31.

Table 30

Difference between Item Grouping C and Item P3 less Item F3

Survey item	*F* value	Probability
F4	1.60	0.2062
F5	4.73	**0.0105**

Table 31

Difference between Item Grouping C and Item P3 less Items F3 and F4

Survey item	*F* value	Probability
F5	16.74	**0.0001**

Item F5 has the greatest effect on the increase of performance Item P3. A *t* test was conducted on Item F5 to determine the magnitude of the effect that each response had on performance Item P3 (Table 32). A positive estimate suggests that for each response (1, 2, or 3) to Item F5 there will be an increase in the mean response to Item P3. A negative estimate suggests that for each response (1, 2, or 3) to Item F5, there will be a decrease in the mean response to Item P3.

Table 32

Difference between Participants' Responses to Item F5 and Item P3

Item F5 response	*t* value	Probability	Estimate
Intercept	22.58	**0.0001**	3.6341
1	-5.76	**0.0001**	-1.4556
2	-3.24	**0.0015**	-0.6887
3	--	--	0.0000

For each Response 1 for Item F5, there will be a -1.4556 decrease of Item P3. Similarly, for each response of 2 and 3 for Item F5, there will be, respectively, a -0.6887 decrease and a 3.6341 (intercept minus response 3 estimate) increase of Item P3. (The effect of a response of 3 to F5 is contained in the intercept.) This analysis suggests that from the participants' perspective, Response 3 for Item F5 has the greatest effect on Item P3. This is expected since the performance of the management attribute, *effective listening and sharing information*, would be influenced by the structure for practicing the Boeing Management Attributes in the work setting.

The second portion of analysis to test the relationship between specific fieldwork item groupings and performance Item P3 looks at Item Grouping D. This grouping contained survey Items F6, F7, and F8 which focused on fieldwork tasks as a method for providing feedback about demonstrated performance. The feedback provided the validation for the demonstrated behavior. Item P3 asked about performance improvement in listening effectively and sharing information. This was one of the management behaviors that was covered and practiced in the classroom. An analysis was conducted to see if there was any significance between items in Item Grouping D (feedback as validation of the fieldwork) and the performance (P3) of listening effectively and sharing information (Table 33).

Table 33

Difference between Item Grouping D and Item P3

Survey item	*F* value	Probability
F6	0.51	0.8628
F7	1.35	0.2636
F8	1.10	0.3367

The probability for Item F6 is the least significant and contributes the least to affecting Item P3. Item F6 was removed and the analysis was rerun, generating the results in Table 34.

Table 34

Difference between Item Grouping D and Item P3 less Item F6

Survey item	*F* value	Probability
F7	2.86	0.0614
F8	1.44	0.2410

The probability for Item F8 is the least significant and contributes the least to affecting Item P3. Item F8 was removed and the analysis was rerun, generating the results in Table 35.

Table 35

Difference between Item Grouping D and Item P3 less Items F6 and F8

Survey item	*F* value	Probability
F7	13.05	**0.0001**

Item F7 has the greatest effect on the increase of performance Item P3. A *t* test was conducted on Item F7 to determine the magnitude of the effect that each response had on performance Item P3 (Table 36). A positive estimate suggests that for each response (1, 2, or 3) to Item F7 there will be an increase in the mean response to Item P3. A negative estimate suggests that for each response (1, 2, or 3) to Item F7 there will be a decrease in the mean response to Item P3.

Table 36

Difference between Responses to Item F7 and Item P3

Item F7 response	*t* value	Probability	Estimate
Intercept	21.23	**0.0001**	3.5897
1	-5.08	**0.0001**	-1.3589
2	-2.94	**0.0039**	-0.6406
3	--	--	0.0000

For each Response 1 for Item F7, there will be a -1.3589 decrease of Item P3. Similarly, for each response of 2 and 3 for Item F7, there will be, respectively, a -0.6406 decrease and a 3.5897 (intercept minus response 3 estimate) increase of Item P3. (The effect of a response of 3 to F7 is contained in the intercept.) This analysis suggests that from the participants' perspective, Response 3 for Item F7 has the greatest effect on Item P3. This is expected since the performance of the management attribute, *effective listening and sharing information*, would be influenced by the validation process of receiving timely feedback when demonstrating the Boeing Management Attributes in the work setting.

Summary

The data suggest that there was a positive relationship between the rubrics used to structure the application of learned behavior in a work setting and the subsequent performance of that learned behavior in the work setting. This relationship was found to be true in terms of the classroom content of listening effectively and sharing information.

The data also suggest that there was a positive relationship between the feedback structure used to validate the application of learned behavior in a work setting and the subsequent performance of the performance of that learned behavior in the work setting. This

relationship, again, was found to be true for the classroom content of listening effectively and sharing information.

In addition, the results indicate a statistically significant difference in the participants' responses (pre- and post-Session I) and in the observers' responses as a group (pre- and post their use of the behavior scales while observing the fieldwork tasks), especially for Item Groupings A and B. This analysis suggests that both participants and observers experienced a gain in knowledge of how behavior scales could be developed and how they could be used to assess levels of performance.

An interesting relationship was discovered when analyzing which of the performance survey items was a predictor of overall performance. Both participants and observers perceived that increased participant performance in managing employee effectiveness (P1) had the greatest impact on the participants' overall performance (P5).

In summary, the data show that there was change in performance levels of the management attribute, *listening effectively and sharing information*, and that the change could be attributed to the use of the behavior scales and the validation methodology. Chapter 5 will summarize conclusions which may be drawn from these data. All conclusions relate to operations managers with the Boeing Everett Division.

CHAPTER 5

Summary, Conclusions, and Recommendations

Summary

The purpose of this study was to contribute to the body of knowledge about transfer of training. The study focused on developing a methodology to increase the transfer of learning from the classroom into a work setting for a management development class.

The transfer methodology designed to be used with a management development course consisted of a set of performance tasks, a set of behavior descriptions for each performance task, and a framework for validating the performance tasks. The study data were gathered from written surveys completed by participants of the management training course and by observers who watched participants demonstrate specific behaviors in the work setting. A total of 192 participants and observers responded to the study. The survey data from all respondents were analyzed, and conclusions and recommendations were formulated. For ease in understanding the conclusions, Table 7 from Chapter 4 will be repeated here.

Table 7

Breakdown of Survey Items into Six Topic Groups for Subsequent Analysis

Item grouping	Survey items	Topic groups
A	F1a, F1b	Knowledge of how behavior scales could be developed to describe levels of performance
B	F2a, F2b	Knowledge of how to use behavior scales to assess levels of performance
C	F3, F4, F5	Fieldwork tasks as a structure for applying learned behaviors in the work setting.
D	F6, F7, F8	Fieldwork tasks as a method for providing feedback about demonstrated performance
E	F9, F10	Fieldwork tasks as a method to rate performance
F	P1, P2, P3, P4, P5	Participant performance improvements

Conclusions

After analyzing the data presented in Chapter 4, the following conclusions were drawn about the questions being explored by this study:

1. Can the use of rubrics aid in the transfer of management development training to the workplace?

Survey Item Grouping C (F3, F4, and F5) addressed the fieldwork tasks as a structure for applying learned behaviors in the work setting. The format of each fieldwork task consisted of a statement of the behavior to be demonstrated and a set of rubrics to guide the behavior toward expected levels of performance.

One behavior that managers applied through the fieldwork, *listening effectively and sharing information*, was reflected in one of the five survey items related to management performance: Item P3. The responses to F3, F4, and F5 were compared to the P3 responses to test the correlation between the use of rubrics as a behavior guide and any increase in level of performance. The evidence suggests that the use of rubrics can aid in the transfer of management development training to the workplace.

Survey Item F5, the degree to which the fieldwork provided the structure for the participant to be observed demonstrating the Boeing Management Attributes in the work setting, was found to have a significant influence on the performance improvement of the Boeing Management Attribute: *listening effectively and sharing information.*

The positive correlation between Item Grouping C (F3, F4, and F5) and Item P3 suggests that the fieldwork tasks containing the rubrics as a structure for applying learned behaviors in the work setting did have a positive effect in aiding the transfer of management development training to the workplace. This finding supports the first question of this study.

2. Can a validation process be incorporated to aid in the transfer of management development training to the workplace.

Survey Item Grouping D (F6, F7, and F8) addressed the fieldwork tasks as a method for providing feedback about demonstrated performance. The feedback consisted of signed checklists as well as post-observation meetings designed to validate that the learned behaviors took place in the work setting.

As with the previous Item Grouping C, the responses to Item Grouping D (F6, F7, and F8) were compared to the P3 responses to test the correlation between the framework for validation and any increase in level of performance.

The positive correlation between Item Grouping D and Item P3 suggests that the validation process did have a positive effect in aiding the transfer of management development training to the workplace. This finding supports the second question of this study.

The use of the validation process as a method for providing feedback about performance was in line with the results of the clinical observations.

Further Conclusions

Additional conclusions can be drawn from this study that support the methodology that was designed for transferring management development training from the classroom to the workplace. The change in knowledge levels when using the rubrics as a method of assessing performance was significant for observers. Even though the observers had a limited prior exposure to the rubrics, they did have a significant increase in knowledge on how to use the rubrics. This finding suggests that the design could successfully be used with little formal instruction.

There is a contributing factor to this conclusion. In May and August of 1994, most employees in the company had the opportunity to use the Boeing Management Attributes Reference Guide to assess their

managers on the same behaviors that were measured in this study. However, the current study took the Boeing Management Attributes Reference Guide one step further and articulated descriptions of behavior above and below the acceptable standard. The May and August manager assessments were focused on the individual worker's *recollection* of a manager's ability to demonstrate the management attributes, whereas this study focused on the *observation* of a manager's ability to demonstrate those attributes during the specific fieldwork tasks.

There was also an interesting discovery of which of the performance survey items was a predictor of overall performance. Both participants and observers perceived that increased participant performance in managing employee effectiveness had the greatest impact on the participants' overall performance.

Recommendations

The data from this research have contributed to the body of knowledge about transfer of training; however, the implications that emerged from this limited study lead to several areas which should be explored further. Continued research on transfer of training strategies for management development training is definitely needed. The nature of the "soft skills" taught in many management development courses makes it imperative that businesses have a better sense that these skills can and are being transferred to and used in the workplace.

There also needs to be additional research on the use of rubrics for adults in learning environments, especially in business settings. The use of rubrics as a tool in K-12 classrooms has gained popularity in the past few years. If allowances are made for the needs of the adult learner, it appears that the mechanics of using rubrics can be applied to any learning environment. A related area of exploration would be the design of rubrics to be used as training aids, feedback

systems, and job aids. Such usage could be of value especially in a work setting.

The exploration of these fields of study would contribute to the body of knowledge about transfer of training and would continue to test the implications of the study herein reported. The results of such research would be important to all training professionals.

Concluding Remarks

The transfer of training, especially in business settings, is a continuing concern. Part of the problem is that there is often little or no connection between classroom training and the workplace. Continued research on transfer of training will be necessary before many businesses will begin to see training more as an *investment* than a *cost*.

The paradigm of what constitutes a learning environment needs to be challenged, and the boundaries need to be expanded. Vázquez-Abad and Winer (1992) suggest that the learning environment should include all of the physical, human, and environmental elements that may influence an individual's learning and subsequent performance.

Within these expanded boundaries, training interventions need to have the learner take a more active role. Raelin and LeBien (1993) concluded that action-learning promotes adaptive behavior as well as traditional, technical skills especially when participants are required to apply and use skills within the work environment. Raelin and LeBien also suggest that "executive buy-in to the projects of action learning and the use of the work environment as a learning ground are likely to impact whether participant learning will be considered legitimate, valuable and appropriately rewarded" (1993, p. 67).

The work reported in this investigation is essentially exploratory. The findings of this study are tentative and replications are needed before conclusive generalizations can be made. However, there

is a hope that this study has (1) contributed to the recognition that further examination is needed to develop new and creative methods for transferring management development training to the workplace in order to maximize the use of training resources, and (2) provided data that can be used to develop strategies for increasing the transfer of management development training to the workplace. This study should be considered by any training staff in developing, delivering, and revising training programs for managers.

APPENDIX A

Boeing Management Attributes

BOEING MANAGEMENT ATTRIBUTES

Appendix to Corporate Policy 8D10, Addendum A

Boeing will evaluate, promote and retain managers on the basis of the following attributes:

- Has a record of excellent performance with the highest ethical standards
- Is committed to The Boeing Company, its principles, objectives and goals
- Leads Continuous Quality Improvement focused on Customer satisfaction
- Treats people with fairness, trust and respect
- Removes barriers, promotes teamwork and empowers people to improve business performance
- Demonstrates innovation and seeks to improve technical and business competence
- Seeks intellectual growth and learning
- Coaches people to develop their capabilities
- Shares information, listens to others, and maintains objectivity
- Provides timely communication on results and processes

APPENDIX B

Participant Outcomes--The Manager as a Collaborative Leader

Participant Outcomes

THE MANAGER AS A COLLABORATIVE LEADER

The participant will be able to (orally, in writing or through performance demonstration):

> Develop a description of a collaborative leader.

> Identify the four expectations of Boeing Managers addressed by this course.
> Identify characteristics of the future manager.

> Identify their tendencies on a Theory X-Theory Y continuum.
> Given a list of statements, identify which are Theory X or Theory Y assumptions.

Given his or her self-scored Myers-Briggs Type Indicator results:
> Identify the strengths and weaknesses of his or her personal style.
> Identify the natural fit his or her personal style has with the Boeing Management Attributes.
> Within a group of mixed personal styles, come up with an optimal solution to a problem.

> Identify the main parts of the communication model.
> List influences that can affect an individual's filters.
> Describe the effects of non-verbal communication.
> Describe the impact of environment on communication.
> Demonstrate active listening.

> Identify when coaching is an appropriate response to use with another person.
> Coach someone using the six-step coaching module provided in class.
> Use the questioning technique to help an individual discover possible solutions to real problems or issues.

Given case studies of Support Systems that Handle: 1) Managing Employee Effectiveness, 2) Employee Assistance Programs, 3) Leave of Absence, 4) Harassment and Discrimination, 5) Shifts and Overtime Assignments:
> Identify general guidelines and procedures that govern the situation.
> Identify managerial strategies that can be use in the situation.
> Identify specific managerial actions that can help avoid potential litigation.

> Identify how the Boeing Management Attributes relate to being a collaborative leader.

> Demonstrate:
  * Shares information, listens to others, and maintains ... > Field work.
  * Provides timely communication on results and processes > Field work.
  * Treats people with respect > Field work.

3/21/95 R. Edgar

APPENDIX C

Session I Fieldwork Tasks

Operations Management Skills Enhancement: The Collaborative Leader
Session I Fieldwork Tasks

Instructions:

1. Use the four levels of behavior descriptions as a guide.
2. Practice each task until you feel prepared to have an observation.
3. Select a situation where the appropriate behaviors for the task can be demonstrated.
4. Select a different person for the validation of each of the tasks (except for your supervisor).
5. A minimum validation of a level 3 for each task must be attained before advancing to Session II. Validation levels of 2 or lower must be redone.
6. Any task may be repeated to improve the validation level yet all tasks must be completed within 6 months.
7. Submit original, signed validations to: OMSE Training Records, 0K-73. Keep copies for yourself.
8. Send suggestions for improvement to: OMSE Evaluation Board, 0K-73.

Task *(Each to be completed separately)*	Observations (validations) to be completed by: Self	Your Supervisor	Peer	Subordinate	Customer	Supplier
1 Shares information, listens to others and maintains objectivity when in a staff or crew meeting.	X	X				
2 Shares information, listens to others and maintains objectivity when working with a supplier.	X		X			
3 Provides timely communication on results and processes when working with a customer.	X			X		
4 Provides timely communication on results and processes when working with a supplier.	X				X	
5 Treats people with respect when working with a customer.	X	X				
6 Treats people with respect when in a staff or crew meeting.	X		X			

APPENDIX D

Boeing Management Attributes Reference Guide

Boeing Management Attributes Reference Guide

Note ☐ - examples of attributes in practice

1a Has a record of **excellent performance***

*Excellent performance refers to achieving solid business results while demonstrating leadership, exercising good judgment, accepting accountability, and meeting commitments.

- ☐ Implements breakthrough improvements that reduce costs and cycle time.
- ☐ Systematically eliminates defects, waste, and non-value-added activities.
- ☐ Involves direct reports in defining the work group's vision, goals, and priorities.
- ☐ Makes sound business decisions even in a changing environment.
- ☐ Demonstrates uncompromising responsibility for decisions, actions, and inaction.
- ☐ Sets and meets aggressive commitments to achieve business objectives.

1b Performs with the highest ethical standards

Ethical behavior includes compliance with all laws and regulations, as well as right conduct.

- ☐ Honestly reports results, measurements, and labor charges.
- ☐ Takes action on unethical and unsafe practices, rather than ignoring them.
- ☐ Actions are consistent with words ("walks the talk").
- ☐ Maintains confidentiality; keeps private matters private.
- ☐ Does not misuse company resources; does not give or accept wrongful gifts, gratuities, or favors.

2. Is committed to The Boeing Company, its principles, objectives, and goals

Commitment includes applying company principles, objectives, and goals to the work area.

- ☐ Places the best interests of the company ahead of one's division, organization, group, or self.
- ☐ Helps direct reports understand how their jobs contribute to the company's vision and business success.
- ☐ Bases decisions on long-term objectives rather than this quarter's bottom line.

3. Leads continuous quality improvement focused on customer satisfaction

This attribute emphasizes that customer satisfaction is the target of CQI activities.

- ☐ Actively seeks information from customers about services and products they need.
- ☐ Measures and tracks organization performance and process improvements using customer input.
- ☐ Challenges work processes to better meet customer needs.
- ☐ Uses facts and statistical analyses to improve customer satisfaction.
- ☐ Works cross-functional issues to address customer needs; doesn't "throw problems over the fence."

4. Treats people with fairness, trust, (continued)

Fairness refers to equity in all work-related decisions and activities. Trust is demonstrated by empowering people and honest communication.

- ☐ Avoids "playing favorites" on basis of status, friendship, or family ties (and sex, age, race, religion, etc.).
- ☐ Creates a nonoffensive work environment and actively supports both EEO and Affirmative Action.
- ☐ Gives credit where due, openly recognizing the contributions of others.
- ☐ Admits own mistakes rather than blaming others.

and respect

Respect includes courtesy and threat-free actions.

- ☐ Shows common courtesy to others (doesn't interrupt, asks rather than tells, says "thank you," etc.).
- ☐ Does not threaten or intimidate.
- ☐ Does not take out frustrations on others; does not "shoot the messenger."
- ☐ Handles discipline and performance problems in private, without public humiliation.
- ☐ Does not tell jokes or use language that put people down.

5. Removes barriers, (continued)

Removing barriers involves eliminating roadblocks both within and between work groups.

- ☐ Provides direct reports with the resources needed to do their work (space, tools, training, etc.).
- ☐ Cuts red tape and reduces bureaucracy to get the job done.
- ☐ Spends time in the work area; is available to direct reports on a regular basis.
- ☐ Persists in working to resolve issues within and between work groups.
- ☐ Talks openly with me about difficulties we have in working together.

Nov. 2, 1993

Boeing Management Attributes
Reference Guide

Note ☐ : examples of attributes in practice

promotes teamwork, (continued)

Teamwork focuses on cooperation both within and across work groups.

- ☐ Charters teams, sets guidelines, and then follows through by using recommendations.
- ☐ Promotes team-related work and provides time for team meetings.
- ☐ Develops cooperative relationships with other work groups and other functional areas.
- ☐ Uses expertise of others inside or outside the work group to get the job done.
- ☐ Encourages team members to help one another and shares the workload.

and empowers people to improve business performance

Empowering focuses on giving authority to the people assigned to do the job.

- ☐ Delegates authority as well as responsibility to the lowest possible level.
- ☐ Involves affected parties in problem-solving and decision-making.
- ☐ Encourages direct reports to determine the details of how they do their work (doesn't "micro-manage").
- ☐ Supports judgments and decisions of those who do the work.
- ☐ Includes the subject matter expert in meetings with management.

6. Demonstrates innovation and seeks to improve technical and business competence

This attribute focuses on improving competence through innovation.

- ☐ Repeatedly takes risks in the support of new ideas and improvements.
- ☐ Takes practical steps to transform creative ideas into reality.
- ☐ Rejects "This is the way we've always done it" approach.
- ☐ Encourages others to come up with new ways to continuously improve competence.

7. Seeks intellectual growth and learning

Personal growth and learning includes fostering a learning environment.

- ☐ Gathers information from a variety of sources, levels, and functions to fully understand issues.
- ☐ Seeks feedback from others about his/her own leadership.
- ☐ Stays up to date on technical and business developments (attends classes, reads publications, etc.).
- ☐ Participates in and promotes the exchange of ideas and experiences.
- ☐ Turns problems into opportunities for learning.

8. Coaches people to develop their capabilities

Coaching focuses on the manager assisting others in skill and career development.

- ☐ Provides me with honest, timely feedback on my performance.
- ☐ Encourages me in my learning and development.
- ☐ Provides challenging job assignments based on individual skill levels.
- ☐ Communicates challenging expectations and a belief in my ability to succeed.

9. Shares information, listens to others, and maintains objectivity

This attribute focuses on active listening and nondefensive responding.

- ☐ Focuses on issues and facts rather than personalities.
- ☐ Listens to all sides of the story before taking action.
- ☐ Responds non defensively to those who challenge his/her viewpoint.
- ☐ Asks questions and checks for understanding.
- ☐ Gives full attention to the speaker (doesn't interrupt or engage in other tasks while listening).

10. Provides timely communication on results and processes

This attribute focuses on what and when the manager communicates.

- ☐ Shares information openly and fully; explains decisions, actions, and inactions.
- ☐ Shares own keys to success with others in the company (doesn't withhold own "best practices").
- ☐ Communicates key information immediately to all affected parties.
- ☐ Gives me the information I need to do my job effectively.
- ☐ Holds regular, informative, and interactive staff/crew meetings.

Nov. 2, 1993

APPENDIX E

Rubrics

(a) Task-specific Rubrics

(b) Participant Rubrics

(c) Observer Rubrics

Task-specific Rubrics

COLLABORATIVE LEADER

Shares information, listens to others and maintains objectivity.

4

Makes consistent effort to focuses on issues and facts rather than on personalities.
Objectively and accurately listens to all sides of a story before taking action.
Responds non-defensively to those who challenge his/her viewpoint.
Regularly asks questions and checks for understanding by all involved.
Always gives full attention to the speaker by not interrupting or engaging in other tasks while listening.

3

Focuses on issues and facts rather than on personalities.
Listens to all sides of a story before taking action.
Responds non-defensively to those who challenge his/her viewpoint.
Ask questions and checks for understanding.
Gives full attention to the speaker by not interrupting or engaging in other tasks while listening.

2

Often focuses on personalities rather than on issues and facts.
Occasionally fails to listens to all sides of a story before taking action.
Sometimes becomes defensive to those who challenge his/her viewpoint.
Occasionally misses opportunities to ask questions or check for understanding.
Gives partial attention to the speaker by interrupting or engaging in other tasks while listening.

1

Frequently focuses on personalities rather than on issues and facts.
Often takes action before listening to all sides of a story.
Frequently becomes defensive to those who challenge his/her viewpoint.
Rarely asks questions or checks for understanding.
Tends to interrupt or engage in other tasks while listening to others speak.

Task-specific Rubrics

COLLABORATIVE LEADER

Provides timely communication on results and processes.

4

Makes a consistent effort to share information openly and fully; explains decisions, action and inaction.
Solicits and shares keys to success with others in the company by sharing "best practices."
Is effective in communicating key information immediately to all affected parties.
Objectively and accurately gives others the information they need to perform their job effectively.
Holds regular, informative and interactive staff or crew meetings.

3

Shares information openly and fully; explains decisions, action and inaction.
Shares own keys to success with others in the company by sharing "best practices."
Communicates key information immediately to all affected parties.
Give others the information they need to perform their job effectively.
Holds regular, informative and interactive staff or crew meetings.

2

Often shares information; explains decisions, action and inaction.
Sometimes shares own keys to success with others in the company by sharing "best practices."
Frequently communicates key information to all affected parties.
Is inconsistent in giving others the information they need to perform their job effectively.
Does not always hold regular, informative and interactive staff or crew meetings.

1

Seldomly shares information; explains decisions, action and inaction.
Rarely shares own keys to success with others in the company by sharing "best practices."
Sometimes communicates key information to all affected parties.
Sometimes fails to give others the information they need to perform their job effectively.
Does not hold regular, informative and interactive staff or crew meetings.

Task-specific Rubrics

COLLABORATIVE LEADER

Treats people with respect.

4

Consistently exhibits appropriate courtesy to others by not interrupting, asking rather than telling, saying "thank you," etc.
Does not threaten or intimidate.
Never takes out frustrations on others; does not "shoot the messenger."
Effectively handles discipline and performance problems in private without causing public humiliation.
Never tells jokes or uses language that is degrading to others.

3

Shows courtesy to others by not interrupting, asking rather than telling, saying "thank you," etc.
Does not threaten or intimidate.
Does not take out frustrations on others; does not "shoot the messenger."
Handles discipline and performance problems in private without causing public humiliation.
Does not tell jokes or use language that is degrading to others.

2

Sometimes fails to show courtesy towards others by interrupting, telling rather than asking, neglecting to say "thank you," etc.
Sometimes threatens or intimidates.
Occasionally takes out frustrations on others; "upsets the messenger."
Sometimes handles discipline and performance problems in public without regard for humiliation.
Seldom tells jokes or uses language that is degrading to others.

1

Exhibits insensitivity towards others by interrupting, telling rather than asking, neglecting to say "thank you," etc.
Often threatens or intimidates.
Frequently takes out frustrations on others; "shoots the messenger."
Often handles discipline and performance problems in public without regard for humiliation.
Occasionally tells jokes or uses language that is degrading to others.

Participant Rubrics

COLLABORATIVE LEADER

Shares information, listens to others and maintains objectivity.

4

I made a consistent effort to focus on issues and facts rather than on personalities.
I objectively and accurately listened to all sides of a story before taking action.
I responded non-defensively to those who challenged my viewpoint.
I regularly asked questions and checked for understanding of all involved.
I always gave full attention to the speaker by not interrupting or engaging in other tasks while listening.

3

I focused on issues and facts rather than on personalities.
I listened to all sides of a story before taking action.
I responded non-defensively to those who challenged my viewpoint.
I asked questions and checked for understanding.
I gave full attention to the speaker by not interrupting or engaging in other tasks while listening.

2

I often focused on personalities rather than on issues and facts.
I occasionally failed to listen to all sides of a story before taking action.
I sometimes became defensive to those who challenged my viewpoint.
I occasionally missed opportunities to ask questions or check for understanding.
I gave partial attention to the speaker by interrupting or engaging in other tasks while listening.

1

I frequently focused on personalities rather than on issues and facts.
I often took action before listening to all sides of a story.
I frequently became defensive to those who challenged my viewpoint.
I rarely asked questions or checked for understanding.
I tended to interrupt or engage in other tasks while listening to others speak.

Participant Rubrics

COLLABORATIVE LEADER

Provides timely communication on results and processes.

4

I made a consistent effort to share information openly and fully; I explained decisions, action and inaction.
I solicited and shared my keys to success with others in the company by sharing "best practices."
I was effective in communicating key information immediately to all affected parties.
I objectively and accurately gave others the information they needed to perform their job effectively.
I hold regular, informative and interactive staff or crew meetings.

3

I shared information openly and fully; I explained decisions, action and inaction.
I shared my keys to success with others in the company by sharing "best practices."
I communicated key information immediately to all affected parties.
I gave others the information they needed to perform their job effectively.
I hold regular, informative and interactive staff or crew meetings.

2

I often shared information; I explained decisions, action and inaction.
I sometimes shared my keys to success with others in the company by sharing "best practices."
I frequently communicated key information to all affected parties.
I was inconsistent in giving others the information they needed to perform their job effectively.
I do not always hold regular, informative and interactive staff or crew meetings.

1

I seldom shared information or explained decisions, action and inaction.
I rarely shared my keys to success with others in the company by sharing "best practices."
I sometimes communicated key information to all affected parties.
I sometimes failed to give others the information they needed to perform their job effectively.
I do not hold regular, informative and interactive staff or crew meetings.

Participant Rubrics

COLLABORATIVE LEADER

Treats people with respect.

4

I consistently exhibited appropriate courtesy to others by not interrupting, asking rather than telling, saying "thank you," etc.
I did not threaten or intimidate.
I never took out frustrations on others; I did not "shoot the messenger."
I effectively handled discipline and performance problems in private without causing public humiliation.
I never told jokes or used language that was degrading to others.

3

I showed courtesy to others by not interrupting, asking rather than telling, saying "thank you," etc.
I did not threaten or intimidate.
I did not take out frustrations on others; I did not "shoot the messenger."
I handled discipline and performance problems in private without causing public humiliation.
I did not tell jokes or use language that was degrading to others.

2

I sometimes failed to show courtesy towards others by interrupting, telling rather than asking, neglecting to say "thank you," etc.
I sometimes threatened or intimidated.
I occasionally took out frustrations on others; I "upset the messenger."
I sometimes handled discipline and performance problems in public without regard for humiliation.
I seldom told jokes or used language that was degrading to others.

1

I exhibited insensitivity towards others by interrupting, telling rather than asking, neglecting to say "thank you," etc.
I often threatened or intimidated.
I frequently took out frustrations on others; I "shot the messenger."
I often handled discipline and performance problems in public without regard for humiliation.
I occasionally told jokes or used language that was degrading to others.

Observer Rubrics

COLLABORATIVE LEADER

Shares information, listens to others and maintains objectivity.

4

Makes consistent effort to focus on issues and facts rather than on personalities.
Objectively and accurately listens to all sides of a story before taking action.
Responds non-defensively to those who challenge his/her viewpoint.
Regularly asks questions and checks for understanding by all involved.
Always gives full attention to the speaker by not interrupting or engaging in other tasks while listening.

3

Focuses on issues and facts rather than on personalities.
Listens to all sides of a story before taking action.
Responds non-defensively to those who challenge his/her viewpoint.
Ask questions and checks for understanding.
Gives full attention to the speaker by not interrupting or engaging in other tasks while listening.

2

Often focuses on personalities rather than on issues and facts.
Occasionally fails to listens to all sides of a story before taking action.
Sometimes becomes defensive to those who challenge his/her viewpoint.
Occasionally misses opportunities to ask questions or check for understanding.
Gives partial attention to the speaker by interrupting or engaging in other tasks while listening.

1

Frequently focuses on personalities rather than on issues and facts.
Often takes action before listening to all sides of a story.
Frequently becomes defensive to those who challenge his/her viewpoint.
Rarely asks questions or checks for understanding.
Tends to interrupt or engage in other tasks while listening to others speak.

Observer Rubrics

COLLABORATIVE LEADER

Provides timely communication on results and processes.

4

Makes a consistent effort to share information openly and fully; explains decisions, action and inaction.
Solicits and shares keys to success with others in the company by sharing "best practices."
Is effective in communicating key information immediately to all affected parties.
Objectively and accurately gives others the information they need to perform their job effectively.
Holds regular, informative and interactive staff or crew meetings.

3

Shares information openly and fully; explains decisions, action and inaction.
Shares own keys to success with others in the company by sharing "best practices."
Communicates key information immediately to all affected parties.
Give others the information they need to perform their job effectively.
Holds regular, informative and interactive staff or crew meetings.

2

Often shares information; explains decisions, action and inaction.
Sometimes shares own keys to success with others in the company by sharing "best practices."
Frequently communicates key information to all affected parties.
Is inconsistent in giving others the information they need to perform their job effectively.
Does not always hold regular, informative and interactive staff or crew meetings.

1

Seldomly shares information; explains decisions, action and inaction.
Rarely shares own keys to success with others in the company by sharing "best practices."
Sometimes communicates key information to all affected parties.
Sometimes fails to give others the information they need to perform their job effectively.
Does not hold regular, informative and interactive staff or crew meetings.

Observer Rubrics

COLLABORATIVE LEADER

Treats people with respect.

4

Consistently exhibits appropriate courtesy to others by not interrupting, asking rather than telling, saying "thank you," etc.
Does not threaten or intimidate.
Never takes out frustrations on others; does not "shoot the messenger."
Effectively handles discipline and performance problems in private without causing public humiliation.
Never tells jokes or uses language that is degrading to others.

3

Shows courtesy to others by not interrupting, asking rather than telling, saying "thank you," etc.
Does not threaten or intimidate.
Does not take out frustrations on others; does not "shoot the messenger."
Handles discipline and performance problems in private without causing public humiliation.
Does not tell jokes or use language that is degrading to others.

2

Sometimes fails to show courtesy towards others by interrupting, telling rather than asking, neglecting to say "thank you," etc.
Sometimes threatens or intimidates.
Occasionally takes out frustrations on others; "upsets the messenger."
Sometimes handles discipline and performance problems in public without regard for humiliation.
Seldom tells jokes or uses language that is degrading to others.

1

Exhibits insensitivity towards others by interrupting, telling rather than asking, neglecting to say "thank you," etc.
Often threatens or intimidates.
Frequently takes out frustrations on others; "shoots the messenger."
Often handles discipline and performance problems in public without regard for humiliation.
Occasionally tells jokes or uses language that is degrading to others.

APPENDIX F

Validations

(a) Observer Validation

(b) Self-Validation

Operations Management Skills Enhancement
Fieldwork Task
Observer Validation

Instructions:
1. Review the general descriptions of performance levels 1 through 4 on the reverse side.
2. Read and familiarize yourself with the four levels of behavior descriptions below.
3. Bring this page to your scheduled observation.
4. Select the statements that best describe the behavior observed during the performance of the stated task.
5. Bring this page to the post-observation meeting and reach agreement on level (1,2,3 or 4) of behavior demonstrated.
6. **Target** is for all behaviors to be demonstrated at **a level 3 or above**.
7. Submit signed original to: OMSE Training Records, 0K-73. Keep a copy for yourself.
8. Send suggestions for improvement to: OMSE Evaluation Board, 0K-73.

Manager demonstrating the task: _____ Observer: _____
Briefly describe the setting in which the task was observed: _____
_____

Task 1: Shares information, listens to others and maintains objectivity when in a staff or crew meeting.

4
- ❑ Makes consistent effort to focus on issues and facts rather than on personalities.
- ❑ Objectively and accurately listens to all sides of a story before taking action.
- ❑ Responds non-defensively to those who challenge his/her viewpoint.
- ❑ Regularly asks questions and checks for understanding of all involved.
- ❑ Always gives full attention to the speaker by not interrupting or engaging in other tasks while listening.

3
- ❑ Focuses on issues and facts rather than on personalities.
- ❑ Listens to all sides of a story before taking action.
- ❑ Responds non-defensively to those who challenge his/her viewpoint.
- ❑ Ask questions and checks for understanding.
- ❑ Gives full attention to the speaker by not interrupting or engaging in other tasks while listening.

2
- ❑ Often focuses on personalities rather than on issues and facts.
- ❑ Occasionally fails to listen to all sides of a story before taking action.
- ❑ Sometimes becomes defensive to those who challenge his/her viewpoint.
- ❑ Occasionally misses opportunities to ask questions or check for understanding.
- ❑ Gives partial attention to the speaker by interrupting or engaging in other tasks while listening.

1
- ❑ Frequently focuses on personalities rather than on issues and facts.
- ❑ Often takes action before listening to all sides of a story.
- ❑ Frequently becomes defensive to those who challenge his/her viewpoint.
- ❑ Rarely asks questions or checks for understanding.
- ❑ Tends to interrupt or engage in other tasks while listening to others speak.

On _____ (Date), _____ (Manager demonstrating the task) and I agreed upon a level of demonstrated behavior of: _____ (1,2,3 or 4)

_____ (Observer)

Please submit signed original to: OMSE Training Records, 0K-73.

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Operations Management Skills Enhancement

Performance Levels

The Operations Management Skills Enhancement course will use the following four performance levels when providing feedback. Please keep these levels in mind when performance is being assessed.

[4]

Performance which exceeds expectations.

[3]

Performance which meets expectations.

[2]

Performance which partially meets expectations.

[1]

Performance which does not meet expectations.

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Note: This Performance Level Descriptor page was page 2 of each observer and participant validation form for all six tasks (i.e., there were 12 of these performance level pages--all exactly alike). However, only one of these pages is included in this appendix.

Operations Management Skills Enhancement
Fieldwork Task
Observer Validation

Instructions:
1. Review the general descriptions of performance levels 1 through 4 on the reverse side.
2. Read and familiarize yourself with the four levels of behavior descriptions below.
3. Bring this page to your scheduled observation.
4. Select the statements that best describe the behavior observed during the performance of the stated task.
5. Bring this page to the post-observation meeting and reach agreement on level (1,2,3 or 4) of behavior demonstrated.
6. **Target** is for all behaviors to be demonstrated at a **level 3 or above**.
7. Submit signed original to: OMSE Training Records, 0K-73. Keep a copy for yourself.
8. Send suggestions for improvement to: OMSE Evaluation Board, 0K-73.

Manager demonstrating the task: _____ Observer: _____
Briefly describe the setting in which the task was observed: _____
_____

Task 2: Shares information, listens to others and maintains objectivity when working with a supplier.

4
- ❑ Makes consistent effort to focus on issues and facts rather than on personalities.
- ❑ Objectively and accurately listens to all sides of a story before taking action.
- ❑ Responds non-defensively to those who challenge his/her viewpoint.
- ❑ Regularly asks questions and checks for understanding of all involved.
- ❑ Always gives full attention to the speaker by not interrupting or engaging in other tasks while listening.

3
- ❑ Focuses on issues and facts rather than on personalities.
- ❑ Listens to all sides of a story before taking action.
- ❑ Responds non-defensively to those who challenge his/her viewpoint.
- ❑ Ask questions and checks for understanding.
- ❑ Gives full attention to the speaker by not interrupting or engaging in other tasks while listening.

2
- ❑ Often focuses on personalities rather than on issues and facts.
- ❑ Occasionally fails to listen to all sides of a story before taking action.
- ❑ Sometimes becomes defensive to those who challenge his/her viewpoint.
- ❑ Occasionally misses opportunities to ask questions or check for understanding.
- ❑ Gives partial attention to the speaker by interrupting or engaging in other tasks while listening.

1
- ❑ Frequently focuses on personalities rather than on issues and facts.
- ❑ Often takes action before listening to all sides of a story.
- ❑ Frequently becomes defensive to those who challenge his/her viewpoint.
- ❑ Rarely asks questions or checks for understanding.
- ❑ Tends to interrupt or engage in other tasks while listening to others speak.

On _____ (Date), _____ (Manager demonstrating the task) and I agreed upon a level of demonstrated behavior of: _____ (1,2,3 or 4)

_____ (Observer)

Please submit signed original to: OMSE Training Records, 0K-73.

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Operations Management Skills Enhancement
Fieldwork Task
Observer Validation

Instructions:
1. Review the general descriptions of performance levels 1 through 4 on the reverse side.
2. Read and familiarize yourself with the four levels of behavior descriptions below.
3. Bring this page to your scheduled observation.
4. Select the statements that best describe the behavior observed during the performance of the stated task.
5. Bring this page to the post-observation meeting and reach agreement on level (1,2,3 or 4) of behavior demonstrated.
6. **Target** is for all behaviors to be demonstrated at a **level 3 or above**.
7. Submit signed original to: OMSE Training Records, 0K-73. Keep a copy for yourself.
8. Send suggestions for improvement to: OMSE Evaluation Board, 0K-73.

Manager demonstrating the task: _____ Observer: _____
Briefly describe the setting in which the task was observed: _____
_____

Task 3: Provides timely communication on results and processes when working with a customer.

4
- ❑ Makes a consistent effort to share information openly and fully; explains decisions, action and inaction.
- ❑ Solicits and shares keys to success with others in the company by sharing "best practices."
- ❑ Is effective in communicating key information immediately to all affected parties.
- ❑ Objectively and accurately gives others the information they need to perform their job effectively.
- ❑ Holds regular, informative and interactive staff or crew meetings.

3
- ❑ Shares information openly and fully; explains decisions, action and inaction.
- ❑ Shares own keys to success with others in the company by sharing "best practices."
- ❑ Communicates key information immediately to all affected parties.
- ❑ Give others the information they need to perform their job effectively.
- ❑ Holds regular, ir.formative and interactive staff or crew meetings.

2
- ❑ Often shares information; explains decisions, action and inaction.
- ❑ Sometimes shares own keys to success with others in the company by sharing "best practices."
- ❑ Frequently communicates key information to all affected parties.
- ❑ Is inconsistent in giving others the information they need to perform their job effectively.
- ❑ Does not always hold regular, informative and interactive staff or crew meetings.

1
- ❑ Seldomly shares information or explains decisions, action and inaction.
- ❑ Rarely shares own keys to success with others in the company by sharing "best practices."
- ❑ Sometimes communicates key information to all affected parties.
- ❑ Sometimes fails to give others the information they need to perform their job effectively.
- ❑ Does not hold regular, informative and interactive staff or crew meetings.

On _____ , _____ and I agreed upon a level of demonstrated behavior of: _____
(Date) (Manager demonstrating the task) (1,2,3 or 4)

_____ *Please submit signed original to: OMSE Training Records, 0K-73.*
(Observer)

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Operations Management Skills Enhancement
Fieldwork Task
Observer Validation

Instructions:
1. Review the general descriptions of performance levels 1 through 4 on the reverse side.
2. Read and familiarize yourself with the four levels of behavior descriptions below.
3. Bring this page to your scheduled observation.
4. Select the statements that best describe the behavior observed during the performance of the stated task.
5. Bring this page to the post-observation meeting and reach agreement on level (1,2,3 or 4) of behavior demonstrated.
6. **Target** is for all behaviors to be demonstrated at **a level 3 or above.**
7. Submit signed original to: OMSE Training Records, 0K-73. Keep a copy for yourself.
8. Send suggestions for improvement to: OMSE Evaluation Board, 0K-73.

Manager demonstrating the task: _____ Observer: _____
Briefly describe the setting in which the task was observed: _____
_____

Task 4: Provides timely communication on results and processes when working with a supplier.

4
- ❑ Makes a consistent effort to share information openly and fully; explains decisions, action and inaction.
- ❑ Solicits and shares keys to success with others in the company by sharing "best practices."
- ❑ Is effective in communicating key information immediately to all affected parties.
- ❑ Objectively and accurately gives others the information they need to perform their job effectively.
- ❑ Holds regular, informative and interactive staff or crew meetings.

3
- ❑ Shares information openly and fully; explains decisions, action and inaction.
- ❑ Shares own keys to success with others in the company by sharing "best practices."
- ❑ Communicates key information immediately to all affected parties.
- ❑ Give others the information they need to perform their job effectively.
- ❑ Holds regular, informative and interactive staff or crew meetings.

2
- ❑ Often shares information; explains decisions, action and inaction.
- ❑ Sometimes shares own keys to success with others in the company by sharing "best practices."
- ❑ Frequently communicates key information to all affected parties.
- ❑ Is inconsistent in giving others the information they need to perform their job effectively.
- ❑ Does not always hold regular, informative and interactive staff or crew meetings.

1
- ❑ Seldomly shares information or explains decisions, action and inaction.
- ❑ Rarely shares own keys to success with others in the company by sharing "best practices."
- ❑ Sometimes communicates key information to all affected parties.
- ❑ Sometimes fails to give others the information they need to perform their job effectively.
- ❑ Does not hold regular, informative and interactive staff or crew meetings.

On _____ (Date), _____ (Manager demonstrating the task) and I agreed upon a level of demonstrated behavior of: _____ (1,2,3 or 4)

_____ (Observer)

Please submit signed original to: OMSE Training Records, 0K-73

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Operations Management Skills Enhancement
Fieldwork Task
Observer Validation

Instructions:
1. Review the general descriptions of performance levels 1 through 4 on the reverse side.
2. Read and familiarize yourself with the four levels of behavior descriptions below.
3. Bring this page to your scheduled observation.
4. Select the statements that best describe the behavior observed during the performance of the stated task.
5. Bring this page to the post-observation meeting and reach agreement on level (1,2,3 or 4) of behavior demonstrated.
6. **Target** is for all behaviors to be demonstrated at a **level 3 or above**.
7. Submit signed original to: OMSE Training Records, 0K-73. Keep a copy for yourself.
8. Send suggestions for improvement to: OMSE Evaluation Board, 0K-73.

Manager demonstrating the task: _____ Observer: _____
Briefly describe the setting in which the task was observed: _____

Task 5: Treats people with respect when working with a customer.

4
- ❑ Consistently exhibits appropriate courtesy to others by not interrupting, asking rather than telling, saying "thank you," etc.
- ❑ Does not threaten or intimidate.
- ❑ Never takes out frustrations on others; does not "shoot the messenger."
- ❑ Effectively handles discipline and performance problems in private without causing public humiliation.
- ❑ Never tells jokes or uses language that is degrading to others.

3
- ❑ Shows courtesy to others by not interrupting, asking rather than telling, saying "thank you," etc.
- ❑ Does not threaten or intimidate.
- ❑ Does not take out frustrations on others; does not "shoot the messenger."
- ❑ Handles discipline and performance problems in private without causing public humiliation.
- ❑ Does not tell jokes or use language that is degrading to others.

2
- ❑ Sometimes fails to show courtesy towards others by interrupting, telling rather than asking, neglecting to say "thank you," etc.
- ❑ Sometimes threatens or intimidates.
- ❑ Occasionally takes out frustrations on others; "upsets the messenger."
- ❑ Sometimes handles discipline and performance problems in public without regard for humiliation.
- ❑ Seldom tells jokes or uses language that is degrading to others.

1
- ❑ Exhibits insensitivity towards others by interrupting, telling rather than asking, neglecting to say "thank you," etc.
- ❑ Often threatens or intimidates.
- ❑ Frequently takes out frustrations on others; "shoots the messenger."
- ❑ Often handles discipline and performance problems in public without regard for humiliation.
- ❑ Occasionally tells jokes or uses language that is degrading to others.

On _____ (Date), _____ (Manager demonstrating the task) and I agreed upon a level of demonstrated behavior of: _____ (1,2,3 or 4)

_____ (Observer)

Please submit signed original to: OMSE Training Records, 0K-73

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Operations Management Skills Enhancement
Fieldwork Task
Observer Validation

Instructions:
1. Review the general descriptions of performance levels 1 through 4 on the reverse side.
2. Read and familiarize yourself with the four levels of behavior descriptions below.
3. Bring this page to your scheduled observation.
4. Select the statements that best describe the behavior observed during the performance of the stated task.
5. Bring this page to the post-observation meeting and reach agreement on level (1,2,3 or 4) of behavior demonstrated.
6. **Target** is for all behaviors to be demonstrated at **a level 3 or above.**
7. Submit signed original to: OMSE Training Records, 0K-73. Keep a copy for yourself.
8. Send suggestions for improvement to: OMSE Evaluation Board, 0K-73.

Manager demonstrating the task: _____ Observer: _____
Briefly describe the setting in which the task was observed: _____

Task 6: Treats people with respect when in a staff or crew meeting.

4
- ❑ Consistently exhibits appropriate courtesy to others by not interrupting, asking rather than telling, saying "thank you," etc.
- ❑ Does not threaten or intimidate.
- ❑ Never takes out frustrations on others; does not "shoot the messenger."
- ❑ Effectively handles discipline and performance problems in private without causing public humiliation.
- ❑ Never tells jokes or uses language that is degrading to others.

3
- ❑ Shows courtesy to others by not interrupting, asking rather than telling, saying "thank you," etc.
- ❑ Does not threaten or intimidate.
- ❑ Does not take out frustrations on others; does not "shoot the messenger."
- ❑ Handles discipline and performance problems in private without causing public humiliation.
- ❑ Does not tell jokes or use language that is degrading to others.

2
- ❑ Sometimes fails to show courtesy towards others by interrupting, telling rather than asking, neglecting to say "thank you," etc.
- ❑ Sometimes threatens or intimidates.
- ❑ Occasionally takes out frustrations on others; "upsets the messenger."
- ❑ Sometimes handles discipline and performance problems in public without regard for humiliation.
- ❑ Seldom tells jokes or uses language that is degrading to others.

1
- ❑ Exhibits insensitivity towards others by interrupting, telling rather than asking, neglecting to say "thank you," etc.
- ❑ Often threatens or intimidates.
- ❑ Frequently takes out frustrations on others; "shoots the messenger."
- ❑ Often handles discipline and performance problems in public without regard for humiliation.
- ❑ Occasionally tells jokes or uses language that is degrading to others.

On _____ (Date), _____ (Manager demonstrating the task) and I agreed upon a level of demonstrated behavior of: _____ (1,2,3 or 4).

_____ (Observer)

Please submit signed original to: OMSE Training Records, 0K-73

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Operations Management Skills Enhancement
Fieldwork Task
Self-Validation

Instructions:
1. Review the general descriptions of performance levels 1 through 4 on the reverse side.
2. Read and familiarize yourself with the four levels of behavior descriptions below.
3. Bring this page to your scheduled observation.
4. Select the statements that best describe the behavior you demonstrated during the performance of the stated task.
5. Bring this page to the post-observation meeting and reach agreement on level (1,2,3 or 4) of behavior demonstrated.
6. **Target** is for all behaviors to be demonstrated at a **level 3 or above**.
7. Submit signed original to: OMSE Training Records, 0K-73. Keep a copy for yourself.
8. Send suggestions for improvement to: OMSE Evaluation Board, 0K-73.

Manager demonstrating the task: _____ Observer: _____
Briefly describe the setting in which the task was observed: _____
_____

Task 1: Shares information, listens to others and maintains objectivity when in a staff or crew meeting.

4
- ☐ I made a consistent effort to focus on issues and facts rather than on personalities.
- ☐ I objectively and accurately listened to all sides of a story before taking action.
- ☐ I responded non-defensively to those who challenged my viewpoint.
- ☐ I regularly asked questions and checked for understanding of all involved.
- ☐ I always gave full attention to the speaker by not interrupting or engaging in other tasks while listening.

3
- ☐ I focused on issues and facts rather than on personalities.
- ☐ I listened to all sides of a story before taking action.
- ☐ I responded non-defensively to those who challenged my viewpoint.
- ☐ I asked questions and checked for understanding.
- ☐ I gave full attention to the speaker by not interrupting or engaging in other tasks while listening.

2
- ☐ I often focused on personalities rather than on issues and facts.
- ☐ I occasionally failed to listen to all sides of a story before taking action.
- ☐ I sometimes became defensive to those who challenged my viewpoint.
- ☐ I occasionally missed opportunities to ask questions or check for understanding.
- ☐ I gave partial attention to the speaker by interrupting or engaging in other tasks while listening.

1
- ☐ I frequently focused on personalities rather than on issues and facts.
- ☐ I often took action before listening to all sides of a story.
- ☐ I frequently became defensive to those who challenged my viewpoint.
- ☐ I rarely asked questions or checked for understanding.
- ☐ I tended to interrupt or engage in other tasks while listening to others speak.

On _____ (Date), my observer and I agreed that my level of demonstrated behavior was: _____ (1,2,3 or 4).

_____ (Manager demonstrating the task)

Please submit signed original to: OMSE Training Records, 0K-73

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Operations Management Skills Enhancement
Fieldwork Task
Self-Validation

Instructions:
1. Review the general descriptions of performance levels 1 through 4 on the reverse side.
2. Read and familiarize yourself with the four levels of behavior descriptions below.
3. Bring this page to your scheduled observation.
4. Select the statements that best describe the behavior you demonstrated during the performance of the stated task.
5. Bring this page to the post-observation meeting and reach agreement on level (1,2,3 or 4) of behavior demonstrated.
6. **Target** is for all behaviors to be demonstrated at a **level 3 or above**.
7. Submit signed original to: OMSE Training Records, 0K-73. Keep a copy for yourself.
8. Send suggestions for improvement to: OMSE Evaluation Board, 0K-73.

Manager demonstrating the task: _____ Observer: _____
Briefly describe the setting in which the task was observed: _____
_____

Task 2: Shares information, listens to others and maintains objectivity when working with a supplier.

4
- ❑ I made a consistent effort to focus on issues and facts rather than on personalities.
- ❑ I objectively and accurately listened to all sides of a story before taking action.
- ❑ I responded non-defensively to those who challenged my viewpoint.
- ❑ I regularly asked questions and checked for understanding of all involved.
- ❑ I always gave full attention to the speaker by not interrupting or engaging in other tasks while listening.

3
- ❑ I focused on issues and facts rather than on personalities.
- ❑ I listened to all sides of a story before taking action.
- ❑ I responded non-defensively to those who challenged my viewpoint.
- ❑ I asked questions and checked for understanding.
- ❑ I gave full attention to the speaker by not interrupting or engaging in other tasks while listening.

2
- ❑ I often focused on personalities rather than on issues and facts.
- ❑ I occasionally failed to listen to all sides of a story before taking action.
- ❑ I sometimes became defensive to those who challenged my viewpoint.
- ❑ I occasionally missed opportunities to ask questions or check for understanding.
- ❑ I gave partial attention to the speaker by interrupting or engaging in other tasks while listening.

1
- ❑ I frequently focused on personalities rather than on issues and facts.
- ❑ I often took action before listening to all sides of a story.
- ❑ I frequently became defensive to those who challenged my viewpoint.
- ❑ I rarely asked questions or checked for understanding.
- ❑ I tended to interrupt or engage in other tasks while listening to others speak.

On _____ (Date), my observer and I agreed that my level of demonstrated behavior was: _____ (1,2,3 or 4).

_____ (Manager demonstrating the task)

Please submit signed original to: OMSE Training Records, 0K-73.

03/21/95 R. Edgar

Operations Management Skills Enhancement
Fieldwork Task
Self-Validation

Instructions:
1. Review the general descriptions of performance levels 1 through 4 on the reverse side.
2. Read and familiarize yourself with the four levels of behavior descriptions below.
3. Bring this page to your scheduled observation.
4. Select the statements that best describe the behavior you demonstrated during the performance of the stated task.
5. Bring this page to the post-observation meeting and reach agreement on level (1,2,3 or 4) of behavior demonstrated.
6. **Target** is for all behaviors to be demonstrated at **a level 3 or above**.
7. Submit signed original to: OMSE Training Records, 0K-73. Keep a copy for yourself.
8. Send suggestions for improvement to: OMSE Evaluation Board, 0K-73.

Manager demonstrating the task: _____ Observer: _____
Briefly describe the setting in which the task was observed: _____
_____

Task 3: Provides timely communication on results and processes when working with a customer.

4
- ❑ I made a consistent effort to share information openly and fully; I explained decisions, action and inaction.
- ❑ I solicited and shared my keys to success with others in the company by sharing "best practices."
- ❑ I was effective in communicating key information immediately to all affected parties.
- ❑ I objectively and accurately gave others the information they needed to perform their job effectively.
- ❑ I hold regular, informative and interactive staff or crew meetings.

3
- ❑ I shared information openly and fully; I explained decisions, action and inaction.
- ❑ I shared my keys to success with others in the company by sharing "best practices."
- ❑ I communicated key information immediately to all affected parties.
- ❑ I gave others the information they needed to perform their job effectively.
- ❑ I hold regular, informative and interactive staff or crew meetings.

2
- ❑ I often shared information; I explained decisions, action and inaction.
- ❑ I sometimes shared my keys to success with others in the company by sharing "best practices."
- ❑ I frequently communicated key information to all affected parties.
- ❑ I was inconsistent in giving others the information they needed to perform their job effectively.
- ❑ I do not always hold regular, informative and interactive staff or crew meetings.

1
- ❑ I seldom shared information or explained decisions, action and inaction.
- ❑ I rarely shared my keys to success with others in the company by sharing "best practices."
- ❑ I sometimes communicated key information to all affected parties.
- ❑ I sometimes failed to give others the information they needed to perform their job effectively.
- ❑ I do not hold regular, informative and interactive staff or crew meetings.

On _____ (Date), my observer and I agreed that my level of demonstrated behavior was: _____ (1,2,3 or 4)

_____ (Manager demonstrating the task)

Please submit signed original to: OMSE Training Records, 0K-73.

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Operations Management Skills Enhancement
Fieldwork Task
Self-Validation

Instructions:
1. Review the general descriptions of performance levels 1 through 4 on the reverse side.
2. Read and familiarize yourself with the four levels of behavior descriptions below.
3. Bring this page to your scheduled observation.
4. Select the statements that best describe the behavior you demonstrated during the performance of the stated task.
5. Bring this page to the post-observation meeting and reach agreement on level (1,2,3 or 4) of behavior demonstrated.
6. **Target** is for all behaviors to be demonstrated at a **level 3 or above**.
7. Submit signed original to: OMSE Training Records, 0K-73. Keep a copy for yourself.
8. Send suggestions for improvement to: OMSE Evaluation Board, 0K-73.

Manager demonstrating the task: _____ Observer: _____
Briefly describe the setting in which the task was observed: _____
_____

Task 4: Provides timely communication on results and processes when working with a supplier.

4
- ☐ I made a consistent effort to share information openly and fully; I explained decisions, action and inaction.
- ☐ I solicited and shared my keys to success with others in the company by sharing "best practices."
- ☐ I was effective in communicating key information immediately to all affected parties.
- ☐ I objectively and accurately gave others the information they needed to perform their job effectively.
- ☐ I hold regular, informative and interactive staff or crew meetings.

3
- ☐ I shared information openly and fully; I explained decisions, action and inaction.
- ☐ I shared my keys to success with others in the company by sharing "best practices."
- ☐ I communicated key information immediately to all affected parties.
- ☐ I gave others the information they needed to perform their job effectively.
- ☐ I hold regular, informative and interactive staff or crew meetings.

2
- ☐ I often shared information; I explained decisions, action and inaction.
- ☐ I sometimes shared my keys to success with others in the company by sharing "best practices."
- ☐ I frequently communicated key information to all affected parties.
- ☐ I was inconsistent in giving others the information they needed to perform their job effectively.
- ☐ I do not always hold regular, informative and interactive staff or crew meetings.

1
- ☐ I seldom shared information or explained decisions, action and inaction.
- ☐ I rarely shared my keys to success with others in the company by sharing "best practices."
- ☐ I sometimes communicated key information to all affected parties.
- ☐ I sometimes failed to give others the information they needed to perform their job effectively.
- ☐ I do not hold regular, informative and interactive staff or crew meetings.

On _____ (Date), my observer and I agreed that my level of demonstrated behavior was: _____ (1,2,3 or 4).

_____
(Manager demonstrating the task)

Please submit signed original to: OMSE Training Records, 0K-73.

03/21/96 R. Edgar

Operations Management Skills Enhancement
Fieldwork Task
Self-Validation

Instructions:
1. Review the general descriptions of performance levels 1 through 4 on the reverse side.
2. Read and familiarize yourself with the four levels of behavior descriptions below.
3. Bring this page to your scheduled observation.
4. Select the statements that best describe the behavior you demonstrated during the performance of the stated task.
5. Bring this page to the post-observation meeting and reach agreement on level (1,2,3 or 4) of behavior demonstrated.
6. **Target** is for all behaviors to be demonstrated at a **level 3 or above**.
7. Submit signed original to: OMSE Training Records, 0K-73. Keep a copy for yourself.
8. Send suggestions for improvement to: OMSE Evaluation Board, 0K-73.

Manager demonstrating the task: _____ Observer: _____
Briefly describe the setting in which the task was observed: _____

Task 5: Treats people with respect when working with a customer.

4
- ☐ I consistently exhibited appropriate courtesy to others by not interrupting, asking rather than telling, saying "thank you," etc.
- ☐ I did not threaten or intimidate.
- ☐ I never took out frustrations on others; I did not "shoot the messenger."
- ☐ I effectively handled discipline and performance problems in private without causing public humiliation.
- ☐ I never told jokes or used language that was degrading to others.

3
- ☐ I showed courtesy to others by not interrupting, asking rather than telling, saying "thank you," etc.
- ☐ I did not threaten or intimidate.
- ☐ I did not take out frustrations on others; I did not "shoot the messenger."
- ☐ I handled discipline and performance problems in private without causing public humiliation.
- ☐ I did not tell jokes or use language that was degrading to others.

2
- ☐ I sometimes failed to show courtesy towards others by interrupting, telling rather than asking, neglecting to say "thank you," etc.
- ☐ I sometimes threatened or intimidated.
- ☐ I occasionally took out frustrations on others; I "upset the messenger."
- ☐ I sometimes handled discipline and performance problems in public without regard for humiliation.
- ☐ I seldom told jokes or used language that was degrading to others.

1
- ☐ I exhibited insensitivity towards others by interrupting, telling rather than asking, neglecting to say "thank you," etc.
- ☐ I often threatened or intimidated.
- ☐ I frequently took out frustrations on others; I "shot the messenger."
- ☐ I often handled discipline and performance problems in public without regard for humiliation.
- ☐ I occasionally told jokes or used language that was degrading to others.

On _____ (Date), my observer and I agreed that my level of demonstrated behavior was: _____ (1,2,3 or 4).

_____
(Manager demonstrating the task)

Please submit signed original to: OMSE Training Records, 0K-73

03/21/96 R. Edgar

Operations Management Skills Enhancement
Fieldwork Task
Self-Validation

Instructions:
1. Review the general descriptions of performance levels 1 through 4 on the reverse side.
2. Read and familiarize yourself with the four levels of behavior descriptions below.
3. Bring this page to your scheduled observation.
4. Select the statements that best describe the behavior you demonstrated during the performance of the stated task.
5. Bring this page to the post-observation meeting and reach agreement on level (1,2,3 or 4) of behavior demonstrated.
6. **Target** is for all behaviors to be demonstrated at a **level 3 or above**.
7. Submit signed original to: OMSE Training Records, 0K-73. Keep a copy for yourself.
8. Send suggestions for improvement to: OMSE Evaluation Board, 0K-73.

Manager demonstrating the task: _____ Observer: _____
Briefly describe the setting in which the task was observed: _____

Task 6: Treats people with respect when in a staff or crew meeting.

4
- ❑ I consistently exhibited appropriate courtesy to others by not interrupting, asking rather than telling, saying "thank you," etc.
- ❑ I did not threaten or intimidate.
- ❑ I never took out frustrations on others; I did not "shoot the messenger."
- ❑ I effectively handled discipline and performance problems in private without causing public humiliation.
- ❑ I never told jokes or used language that was degrading to others.

3
- ❑ I showed courtesy to others by not interrupting, asking rather than telling, saying "thank you," etc.
- ❑ I did not threaten or intimidate.
- ❑ I did not take out frustrations on others; I did not "shoot the messenger."
- ❑ I handled discipline and performance problems in private without causing public humiliation.
- ❑ I did not tell jokes or use language that was degrading to others.

2
- ❑ I sometimes failed to show courtesy towards others by interrupting, telling rather than asking, neglecting to say "thank you," etc.
- ❑ I sometimes threatened or intimidated.
- ❑ I occasionally took out frustrations on others; I " upset the messenger."
- ❑ I sometimes handled discipline and performance problems in public without regard for humiliation.
- ❑ I seldom told jokes or used language that was degrading to others.

1
- ❑ I exhibited insensitivity towards others by interrupting, telling rather than asking, neglecting to say "thank you," etc.
- ❑ I often threatened or intimidated.
- ❑ I frequently took out frustrations on others; I "shot the messenger."
- ❑ I often handled discipline and performance problems in public without regard for humiliation.
- ❑ I occasionally told jokes or used language that was degrading to others.

On _____ , my observer and I agreed that my level of demonstrated behavior was: _____.
(Date) (1,2,3 or 4)

_____
(Manager demonstrating the task)

Please submit signed original to: OMSE Training Records, 0K-73

03/21/95 R. Edgar

APPENDIX G

Participant Responsibilities--Fieldwork

Operations Management Skills Enhancement

Participant Responsibilities

In the work environment the manager will:

1. practice skills necessary to meet or exceed the behavioral expectations for each of the assigned tasks.
2. select situations during which the demonstration of expected behaviors are likely to take place.
3. select an observer, as stipulated, for the assigned task.
4. send the Observer Validation form to the observer *in advance* of the scheduled observation.
5. schedule a pre-meeting with the observer to clarify the behaviors to be observed.
6. schedule the observer to view the assigned task.
7. perform the assigned task.
8. complete a Self-Validation form.
9. schedule a post-meeting with the observer to discuss and compare validations.
10. center the discussion upon reaching a common agreement on the performance level demonstrated.
11. repeat the assigned task if a) no agreement can be reached on the performance level demonstrated, or b) if level demonstrated does not meet or exceed behavioral expectations.
12. have up to six (6) months from start of session to meet or exceed the behavioral expectations for each of the assigned tasks.
13. meet or exceed the behavioral expectations in each of the assigned tasks as a prerequisite for attending the next session.
14. meet with the OMSE Evaluation Board to resolve any disputes concerning scoring or not meeting the participant outcomes of the course.
15. have signed originals of all validations sent to OMSE Training Records, 0K-73.

March 21, 1995 R. Edgar

APPENDIX H

Surveys

(a) Participant Survey

(b) Observer Surveys

Supervisor

Peer

Subordinate

Customer

OMSE Participant Survey

Based on your completion of Session I,
please circle an answer for each of the following:

1 = Very little 2 = Somewhat 3 = A lot

	Fieldwork			
1a	Prior to Session I of this course, my knowledge of how a scale could be developed to measure my ability to demonstrate the Boeing Management Attributes was...	1	2	3
1b	After the completion of Session I, my knowledge of how a scale could be developed to measure my ability to demonstrate the Boeing Management Attributes was...	1	2	3
2a	Prior to Session I of this course, my knowledge of how to use a scale to assess performance in the work setting was...	1	2	3
2b	After the completion of Session I, my knowledge of how to use a scale to assess performance in the work setting was...	1	2	3
3	The degree to which the fieldwork provided the structure for me to practice the Boeing Management Attributes in the work setting was...	1	2	3
4	The degree to which the fieldwork increased the likelihood for me to purposefully apply the Boeing Management Attributes in the work setting was...	1	2	3
5	The degree to which the fieldwork provided the structure for me to be observed demonstrating the Boeing Management Attributes in the work setting was...	1	2	3
6	The degree to which the fieldwork provided the structure for me to get reliable and consistent feedback on my ability to demonstrate the Boeing Management Attributes in the work setting was...	1	2	3
7	The degree to which the fieldwork provided me timely feedback of my demonstration of the Boeing Management Attributes in the work setting was...	1	2	3
8	The degree to which the feedback from my observers helped me better understand how I might demonstrate the Boeing Management Attributes in the work setting was...	1	2	3
9	The degree to which the structure of the fieldwork was easy for me to grade myself demonstrating the Boeing Management Attributes in the work setting was...	1	2	3
10	The degree to which the structure of the fieldwork was easy for others to grade me demonstrating the Boeing Management Attributes in the work setting was...	1	2	3

(Continue on other side)

Based on your completion of Session I,
please circle an answer for each of the following:

1 = 0% 2 = 25% 3 = 50% 4 = 75% 5 = 100%

	Performance					
1	The amount to which I feel my performance has improved by managing employee effectiveness is...	1	2	3	4	5
2	The amount to which I feel my performance has improved by coaching and counseling employees is...	1	2	3	4	5
3	The amount to which I feel my performance has improved by listening effectively and sharing information is...	1	2	3	4	5
4	The amount to which I feel my performance has improved by building employee motivation and morale is...	1	2	3	4	5
5	The amount to which I feel my performance has improved as a manager is...	1	2	3	4	5

Additional comments:

Please mail to : OMSE Survey, 0K-73 by December 14
Thank you

OMSE Observer Survey

You were randomly selected as a Session I observer who had been asked to observe fieldwork tasks from the perspective of a Supervisor. Based on that perspective and reflecting on the one or more managers you were asked to observe performing fieldwork, please circle an answer for each of the following:

1 = Very little 2 = Somewhat 3 = A lot

	Fieldwork			
1a	Prior to using the checklists, my knowledge of how a scale could be developed to measure another person's ability to demonstrate the Boeing Management Attributes was...	1	2	3
1b	After using the checklists, my knowledge of how a scale could be developed to measure another person's ability to demonstrate the Boeing Management Attributes was...	1	2	3
2a	Prior to using the checklists, my knowledge of how to use a scale to assess performance in the work setting was...	1	2	3
2b	After using the checklists, my knowledge of how to use a scale to assess performance in the work setting was...	1	2	3
3	The degree to which the fieldwork provided the structure for the manager to practice the Boeing Management Attributes in the work setting was...	1	2	3
4	The degree to which the fieldwork increased the likelihood for the manager to purposefully apply the Boeing Management Attributes in the work setting was...	1	2	3
5	The degree to which the fieldwork provided the structure for the manager to be observed demonstrating the Boeing Management Attributes in the work setting was...	1	2	3
6	The degree to which the fieldwork provided the structure for the manager to get reliable and consistent feedback on his or her ability to demonstrate the Boeing Management Attributes in the work setting was...	1	2	3
7	The degree to which the fieldwork provided the manager timely feedback of his or her demonstration of the Boeing Management Attributes in the work setting was...	1	2	3
8	The degree to which my feedback helped the manager better understand how he or she might demonstrate the Boeing Management Attributes in the work setting was...	1	2	3
9	The degree to which the structure of the fieldwork was easy for the manager to grade his-self or her-self demonstrating the Boeing Management Attributes in the work setting was...	1	2	3
10	The degree to which the structure of the fieldwork was easy for me to grade the manager demonstrating the Boeing Management Attributes in the work setting was...	1	2	3

(Continue on other side)

Items 1 through 4 were the focus of Session I of management training.
From the perspective of a Supervisor and reflecting on the one or more managers you were asked to observe performing fieldwork, please circle an answer for each of the following:

1 = 0% 2 = 25% 3 = 50% 4 = 75% 5 = 100% 6 = Do not know

	Performance						
1	The amount of which I feel that management performance has improved in managing employee effectiveness is...	1	2	3	4	5	6
2	The amount of which I feel that management performance has improved in coaching and counseling employees is...	1	2	3	4	5	6
3	The amount of which I feel management performance has improved in listening effectively and sharing information is...	1	2	3	4	5	6
4	The amount of which I feel management performance has improved in building employee motivation and morale is...	1	2	3	4	5	6
5	The amount of which I feel management performance has improved is...	1	2	3	4	5	6

Additional comments:

Please mail to : OMSE Survey, OK-73 by March 17
Thank you

Operations Management Skills Enhancement

Performance Levels

The Operations Management Skills Enhancement course will use the following four performance levels when providing feedback. Please keep these levels in mind when performance is being assessed.

4

Performance which exceeds expectations.

3

Performance which meets expectations.

2

Performance which partially meets expectations.

1

Performance which does not meet expectations.

03/21/96 R. Edgar

OMSE Observer Survey

You were randomly selected as a Session I observer who had been asked to observe fieldwork tasks from the perspective of a Peer. Based on that perspective and reflecting on the one or more managers you were asked to observe performing fieldwork, please circle an answer for each of the following:

1 = Very little 2 = Somewhat 3 = A lot

	Fieldwork			
1a	Prior to using the checklists, my knowledge of how a scale could be developed to measure another person's ability to demonstrate the Boeing Management Attributes was...	1	2	3
1b	After using the checklists, my knowledge of how a scale could be developed to measure another person's ability to demonstrate the Boeing Management Attributes was...	1	2	3
2a	Prior to using the checklists, my knowledge of how to use a scale to assess performance in the work setting was...	1	2	3
2b	After using the checklists, my knowledge of how to use a scale to assess performance in the work setting was...	1	2	3
3	The degree to which the fieldwork provided the structure for the manager to practice the Boeing Management Attributes in the work setting was...	1	2	3
4	The degree to which the fieldwork increased the likelihood for the manager to purposefully apply the Boeing Management Attributes in the work setting was...	1	2	3
5	The degree to which the fieldwork provided the structure for the manager to be observed demonstrating the Boeing Management Attributes in the work setting was...	1	2	3
6	The degree to which the fieldwork provided the structure for the manager to get reliable and consistent feedback on his or her ability to demonstrate the Boeing Management Attributes in the work setting was...	1	2	3
7	The degree to which the fieldwork provided the manager timely feedback of his or her demonstration of the Boeing Management Attributes in the work setting was...	1	2	3
8	The degree to which my feedback helped the manager better understand how he or she might demonstrate the Boeing Management Attributes in the work setting was...	1	2	3
9	The degree to which the structure of the fieldwork was easy for the manager to grade his-self or her-self demonstrating the Boeing Management Attributes in the work setting was...	1	2	3
10	The degree to which the structure of the fieldwork was easy for me to grade the manager demonstrating the Boeing Management Attributes in the work setting was...	1	2	3

(Continue on other side)

Items 1 through 4 were the focus of Session I of management training.
From the perspective of a Peer and reflecting on the one or more managers you were asked to observe performing fieldwork, please circle an answer for each of the following:

1 = 0% 2 = 25% 3 = 50% 4 = 75% 5 = 100% 6 = Do not know

	Performance						
1	The amount of which I feel that management performance has improved in managing employee effectiveness is...	1	2	3	4	5	6
2	The amount of which I feel that management performance has improved in coaching and counseling employees is...	1	2	3	4	5	6
3	The amount of which I feel management performance has improved in listening effectively and sharing information is...	1	2	3	4	5	6
4	The amount of which I feel management performance has improved in building employee motivation and morale is...	1	2	3	4	5	6
5	The amount of which I feel management performance has improved is...	1	2	3	4	5	6

Additional comments:

Please mail to : OMSE Survey, 0K-73 by March 17
Thank you

OMSE Observer Survey

You were randomly selected as a Session I observer who had been asked to observe fieldwork tasks from the perspective of a Subordinate. Based on that perspective and reflecting on the one or more managers you were asked to observe performing fieldwork, please circle an answer for each of the following:

1 = Very little 2 = Somewhat 3 = A lot

	Fieldwork			
1a	Prior to using the checklists, my knowledge of how a scale could be developed to measure another person's ability to demonstrate the Boeing Management Attributes was...	1	2	3
1b	After using the checklists, my knowledge of how a scale could be developed to measure another person's ability to demonstrate the Boeing Management Attributes was...	1	2	3
2a	Prior to using the checklists, my knowledge of how to use a scale to assess performance in the work setting was...	1	2	3
2b	After using the checklists, my knowledge of how to use a scale to assess performance in the work setting was...	1	2	3
3	The degree to which the fieldwork provided the structure for the manager to practice the Boeing Management Attributes in the work setting was...	1	2	3
4	The degree to which the fieldwork increased the likelihood for the manager to purposefully apply the Boeing Management Attributes in the work setting was...	1	2	3
5	The degree to which the fieldwork provided the structure for the manager to be observed demonstrating the Boeing Management Attributes in the work setting was...	1	2	3
6	The degree to which the fieldwork provided the structure for the manager to get reliable and consistent feedback on his or her ability to demonstrate the Boeing Management Attributes in the work setting was...	1	2	3
7	The degree to which the fieldwork provided the manager timely feedback of his or her demonstration of the Boeing Management Attributes in the work setting was...	1	2	3
8	The degree to which my feedback helped the manager better understand how he or she might demonstrate the Boeing Management Attributes in the work setting was...	1	2	3
9	The degree to which the structure of the fieldwork was easy for the manager to grade his-self or her-self demonstrating the Boeing Management Attributes in the work setting was...	1	2	3
10	The degree to which the structure of the fieldwork was easy for me to grade the manager demonstrating the Boeing Management Attributes in the work setting was...	1	2	3

(Continue on other side)

Items 1 through 4 were the focus of Session I of management training.
From the perspective of a Subordinate and reflecting on the one or more managers you were asked to observe performing fieldwork, please circle an answer for each of the following:

1 = 0% 2 = 25% 3 = 50% 4 = 75% 5 = 100% 6 = Do not know

	Performance						
1	The amount of which I feel that management performance has improved in managing employee effectiveness is...	1	2	3	4	5	6
2	The amount of which I feel that management performance has improved in coaching and counseling employees is...	1	2	3	4	5	6
3	The amount of which I feel management performance has improved in listening effectively and sharing information is...	1	2	3	4	5	6
4	The amount of which I feel management performance has improved in building employee motivation and morale is...	1	2	3	4	5	6
5	The amount of which I feel management performance has improved is...	1	2	3	4	5	6

Additional comments:

Please mail to : OMSE Survey, OK-73 by March 17
Thank you

OMSE Observer Survey

You were randomly selected as a Session I observer who had been asked to observe fieldwork tasks from the perspective of a Customer. Based on that perspective and reflecting on the one or more managers you were asked to observe performing fieldwork, please circle an answer for each of the following:

1 = Very little 2 = Somewhat 3 = A lot

	Fieldwork			
1a	Prior to using the checklists, my knowledge of how a scale could be developed to measure another person's ability to demonstrate the Boeing Management Attributes was...	1	2	3
1b	After using the checklists, my knowledge of how a scale could be developed to measure another person's ability to demonstrate the Boeing Management Attributes was...	1	2	3
2a	Prior to using the checklists, my knowledge of how to use a scale to assess performance in the work setting was...	1	2	3
2b	After using the checklists, my knowledge of how to use a scale to assess performance in the work setting was...	1	2	3
3	The degree to which the fieldwork provided the structure for the manager to practice the Boeing Management Attributes in the work setting was...	1	2	3
4	The degree to which the fieldwork increased the likelihood for the manager to purposefully apply the Boeing Management Attributes in the work setting was...	1	2	3
5	The degree to which the fieldwork provided the structure for the manager to be observed demonstrating the Boeing Management Attributes in the work setting was...	1	2	3
6	The degree to which the fieldwork provided the structure for the manager to get reliable and consistent feedback on his or her ability to demonstrate the Boeing Management Attributes in the work setting was...	1	2	3
7	The degree to which the fieldwork provided the manager timely feedback of his or her demonstration of the Boeing Management Attributes in the work setting was...	1	2	3
8	The degree to which my feedback helped the manager better understand how he or she might demonstrate the Boeing Management Attributes in the work setting was...	1	2	3
9	The degree to which the structure of the fieldwork was easy for the manager to grade his-self or her-self demonstrating the Boeing Management Attributes in the work setting was...	1	2	3
10	The degree to which the structure of the fieldwork was easy for me to grade the manager demonstrating the Boeing Management Attributes in the work setting was...	1	2	3

(Continue on other side)

Items 1 through 4 were the focus of Session I of management training.
From the perspective of a Customer and reflecting on the one or more managers you were asked to observe performing fieldwork, please circle an answer for each of the following:

1 = 0% 2 = 25% 3 = 50% 4 = 75% 5 = 100% 6 = Do not know

	Performance						
1	The amount of which I feel that management performance has improved in managing employee effectiveness is...	1	2	3	4	5	6
2	The amount of which I feel that management performance has improved in coaching and counseling employees is...	1	2	3	4	5	6
3	The amount of which I feel management performance has improved in listening effectively and sharing information is...	1	2	3	4	5	6
4	The amount of which I feel management performance has improved in building employee motivation and morale is...	1	2	3	4	5	6
5	The amount of which I feel management performance has improved is...	1	2	3	4	5	6

Additional comments:

Please mail to : OMSE Survey, OK-73 by March 17
Thank you

APPENDIX I

Cover Letters

(a) Participant

(b) Observer

T-3200-MJC-120
December 7, 1994

To: OMSE Participants (Distribution List)

Subject: OMSE Training

As an ongoing effort, we would appreciate your feedback on how the OMSE Session I Course has helped you as a Manager. In order to provide you with valuable and meaningful training, we ask that you take just a few short moments and fill out the attached questionnaire.

When completed please return to OMSE Survey, M/S OK-73 by December 14th. Thank You!

Bob Edgar

Bob Edgar
342-2561
M/S OK-73

Attachment

T-3200-RLE-136
March 8, 1995

To: OMSE Observers

Subject: Operations Management Skills Enhancement - Observer Evaluation

You have been randomly selected to provide feedback on Session I of the management training course: Operations Management Skills Enhancement.

Over the past few months, you have been asked to observe and rate one or more managers completing their Session I fieldwork tasks. As an observer, you were asked to observe and rate specific behaviors being demonstrated by the manager. You were also asked to conduct your observation from one of the following four perspectives:

1. As supervisor
2. As a peer
3. As a subordinate
4. As a customer

Fieldwork tasks were randomly selected to obtain 40 observers for each of the four perspectives. The intent is to get feedback from a cross-section of the organization. No record was kept of who was being observed. You were randomly selected as one of the 40 observers for the perspective that is indicated on the attached questionnaire. We request that you answer the questionnaire using the perspective as stated.

Our goal is to provide the management team with valuable and meaningful training and we ask that you take a few moments and fill out the attached questionnaire.

When completed, please return to OMSE Survey, M/S 0K-73 by March 17, 1995.

Thank you.

Bob Edgar

Bob Edgar
342-2561
M/S 0K-73

APPENDIX J

Reminder Letters

(a) Participant

(b) Observer

T-3200-RLE-122
December 14, 1994

To: OMSE Participants

Subject: Operations Management Skills Enhancement Survey

Last week you received an Operations Management Skills Enhancement survey. If you have already completed the survey and returned it, we would like to thank you.

If you have not yet responded, we would appreciate your time in completing and sending the one page survey to: OMSE Survey, M/S OK-73.

Bob Edgar

Bob Edgar
342-2561
M/S OK-73

T-3200-RLE-138
March 15, 1995

To: OMSE Observers

Subject: Operations Management Skills Enhancement Survey

Last week you received an Operations Management Skills Enhancement survey. If you have already completed the survey and returned it, we would like to thank you.

If you have not yet responded, we would appreciate your time in completing and sending the one page survey to: OMSE Survey, M/S OK-73.

Thank you.

Bob Edgar

Bob Edgar
342-2561
M/S OK-73

APPENDIX K

Broad and Newstrom (1992) Transfer-of-Training Strategies

Strategies for Managing Transfer of Training

Timing	*Performed by*	*Action*	
BEFORE	Manager	M/B.1	Build transfer of training into supervisory performance standards.
		M/B.2	Collect baseline performance data.
		M/B.3	Involve supervisors and trainees in needs analysis procedures.
		M/B.4	Provide orientation for supervisors.
		M/B.5	Involve trainees in program planning.
		M/B.6	Brief trainees on the importance of the training and on course objectives, content, process and application to the job.
		M/B.7	Review instructional content and materials.
		M/B.8	Provide supervisory coaching skills.
		M/B.9	Provide time to complete precourse assignments.
		M/B.10	Offer reward and promotional preference to trainees who demonstrate new behaviors.
		M/B.11	Select trainees carefully.
		M/B.12	Arrange conferences with prior trainees.
		M/B.13	Send co-workers to training together.
		M/B.14	Provide a positive training environment (timing, location , facilities).
		M/B.15	Plan to participate in training sessions.
		M/B.16	Encourage trainee in training sessions.
		M/B.17	Develop a supervisory/trainee contract.
	Trainer	TR/B.1	Align the HRD program with the organization's strategic plan.
		TR/B.2	Involve managers and trainees.
		TR/B.3	Systematically design instruction.
		TR/B.4	Provide practice opportunities.
		TR/B.5	Develop trainee readiness.
		TR/B.6	Design a peer coaching component for the program and its follow-up activities.
	Trainee	TE/B.1	Provide input into program planning.
		TE/B.2	Actively explore training options.
		TE/B.3	Participate in advance activities.
DURING	Manager	M/D.1	Prevent interruptions.
		M/D.2	Transfer work assignments to others.
		M/D.3	Communicate supervisory/managerial support for the program.
		M/D.4	Monitor attendance and attention to training.
		M/D.5	Recognize trainee participation.
		M/D.6	Participate in transfer action planning.
		M/D.7	Review information on employees in training.
		M/D.8	Plan assessment of transfer of new skills to the job.

	Trainer	TR/D.1	Develop application-oriented objectives.	2
		TR/D.2	Manage the unlearning process.	
		TR/D.3	Answer the "WIIFM" question.	
		TR/D.4	Provide realistic work related tasks.	
		TR/D.5	Provide visualization experiences.	
		TR/D.6	Give individualized feedback.	
		TR/D.7	Provide job performance aids.	
		TR/D.8	Provide "Ideas and Application" notebooks.	
		TR/D.9	Create opportunities for support groups.	
		TR/D.10	Help trainees prepare group action plans.	
		TR/D.11	Have trainees create individual action plans.	
		TR/D.12	Design and conduct relapse prevention sessions.	
		TR/D.13	Help trainees negotiate a contract for change with their supervisors.	
	Trainee	TE/D.1	Link with a buddy.	
		TE/D.2	Maintain an "Ideas and Applications" notebook.	
		TE/D.3	Participate actively.	
		TE/D.4	Form support groups.	
		TE/D.5	Plan for applications.	
		TE/D.6	Anticipate relapse.	
		TE/D.7	Create behavioral contracts.	
FOLLOWING	Manager	M/F.1	Plan trainees' reentry.	
		M/F.2	Psychologically support transfer.	
		M/F.3	Provide a "reality check".	
		M/F.4	Provide opportunities to practice new skills.	
		M/F.5	Have trainees participate in transfer-related decisions.	
		M/F.6	Reduce job pressures initially.	
		M/F.7	Debrief the trainer.	
		M/F.8	Give positive reinforcement.	
		M/F.9	Provide role models.	
		M/F.10	Schedule trainee briefings for co-workers.	
		M/F.11	Set mutual expectations for improvement.	
		M/F.12	Arrange practice (refresher) sessions.	
		M/F.13	Provide and support the use of job aids.	
		M/F.14	Support trainee reunions.	
		M/F.15	Publicize successes.	
		M/F.16	Give promotional preference.	
	Trainer	TR/F.1	Apply the Pygmalion Effect.	
		TR/F.2	Provide follow-up support.	
		TR/F.3	Conduct evaluation surveys and provide feedback.	
		TR/F.4	Develop and administer recognition systems.	
		TR/F.5	Provide refresher/problem-solving sessions.	
	Trainee	TE/F.1	Practice self-management.	
		TE/F.2	Review training content and learned skills..	
		TE/F.3	Develop a mentoring relationship.	
		TE/F.4	Maintain contact with training buddies.	

Source: Transfer of Training, Mary Broad & John Newstrom, 1992

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ABSTRACT

DEVELOPING A METHODOLOGY FOR TRANSFERRING MANAGEMENT DEVELOPMENT TRAINING FROM THE CLASSROOM INTO THE WORK ENVIRONMENT

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Companies in the U.S. are sending an increasing number of managers to training. The length of time spent in training as well as the number of management development programs that are being custom designed and delivered within companies has also increased (Konarski, 1991). The indications are that very little of what is acquired in the classroom is actually transferred into the work environment.

The purpose of this dissertation was to explore how the use of rubrics--continuum of behavior descriptions--could be combined with a structured validation process to aid in the transfer of management training to the workplace. Managers from the Operations Organization, Boeing Commercial Airplane Group, Everett Division, were involved in the study. These managers had attended a custom-designed, in-house-developed management development training course that addressed specific company-designated behaviors that all managers were expected to exhibit in the work environment.

A transfer methodology was developed that consisted of three parts: (1) fieldwork tasks that provided the structure for participants to practice management behaviors when they returned to the work environment, (2) a set of rubrics that provided descriptions of the behavioral expectations for each fieldwork task, and (3) a framework, based on techniques of clinical supervision which allowed for corroboration of each fieldwork task by both the participant and an observer who was either the participant's supervisor, peer, subordinate, or an internal customer.

Surveys elicited participant and observer perceptions in two categories: fieldwork usage and improved performance. By March 1995,

253 participants had completed all classroom and fieldwork tasks. Surveys were sent to these 253 participants and to the 160 employees who had been participant observers. Surveys were returned by 125 participants and sixty-seven observers for an overall return rate of 46.5 percent.

The results of this study indicated that the use of rubrics could assist in the transfer of management development training to the workplace. In addition, the design of the validation framework had a positive effect in aiding the transfer. Other findings suggested that the design of the methodology could successfully be used with minimum formal instruction. Copies of the rubrics, the validation structure, and surveys are included.