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Influences of supervisor and peer support on transfer of training

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INFLUENCES OF SUPERVISOR AND PEER SUPPORT ON TRANSFER OF TRAINING

A Thesis

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ABSTRACT

The influence of supervisor and peer support on the transfer of training was examined. The support variable was operationalized by source into social support and opportunity to use. It was predicted that all supervisor and peer variables would have a positive relationship with training transfer and the relationship between support and transfer would be moderated by the trainee's frequency of contact with the support source. Student employees (N=86) at a major research institution participated in a new hire orientation training and then responded to questionnaires measuring ten transfer behaviors and eight work environment constructs measuring support, frequency of contact, cohesion, and general means efficacy. Supervisor ratings of trainee performance were used to measure transfer behaviors. Accounting for knowledge gained in training, the results from a series of regression analyses indicated that three of the four hypothesized variables were predictive of training transfer. Moderating effects of frequency of contact were not found. Additional analyses using the trainee's self-assessment of performance as the dependent variable revealed significant effects for all four support variables. A moderating effect was found for

the rehire variable indicating that support variables have more effect on new hires than returning employees. Support was found for a positive relationship between the general means efficacy construct and transfer of training. The results of the study support previous research identifying supervisor support as an important component affecting transfer (e.g., Fleishman, 1953; Huczynski & Lewis, 1980) and add to the literature by providing evidence of the differentiating effects of support variables as a function of measures of perceived transfer of training and observed transfer of training. Future research and limitations to the study are also discussed.

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DEDICATION

To my Lord and Savior

Jesus Christ

TABLE OF CONTENTS

CHAPTER ONE

INTRODUCTION

Organizations invest billions of dollars in training each year. In its annual State of the Industry Report, *Training* magazine reported that U.S. companies were predicted to spend over $51.4 billion dollars on formal training programs in 2004 (2004). In 2003, the annual average training expenditure per employee was $818, with some organizations spending as much as $2,240 (*Training*, 2004). These investments are likely to increase as shifting demographics in the U.S. population place new training demands on organizations. It is estimated that the proportion of skilled, entry-level youth entering the U.S. workforce will decline in relation to minorities, women and older workers. Advanced degrees providing critical thinking and decision-making skills will become a minimum requirement of workers as advances in technology continue. The ability of workers to transfer their knowledge across different environments will be necessary due to the rapid pace of changes in technology (Goldstein, 2002). The implications of these factors are that qualified workers will be scarce and organizations will be

required to provide the training necessary so that employees attain a performance level that will contribute to the organization's competitiveness.

Organizations invest in training to improve employee performance on the job and hence, the organization's productivity. Despite these significant expenditures, very little of this investment translates into behavioral changes on the job that improve work performance. This is known as the transfer problem. Baldwin and Ford (1988) report that as little as 10 percent of training expenditures are believed to pay off in on-the-job performance improvements resulting from the transfer of knowledge, skills and abilities. As a result of this transfer problem, researchers have attempted to determine factors that support the transfer of training.

While there are many factors purported to affect the transfer of training, this study will focus on variables found in the work environment to which the trainee returns after training is complete: specifically, the effect of supervisors and peers on the trainee's use of new skills back on the job. The limited studies that have compared these effects have assumed that the trainee has equal exposure to both his or her supervisor and peers. This

study will explore the notion that the frequency of contact trainees have with either the supervisor or their peers may explain why these individuals have an effect on the trainee's transfer of training.

CHAPTER TWO

LITERATURE REVIEW

Transfer of Training

Models of Transfer

Transfer of training has been defined as the degree to which trainees apply to their jobs the knowledge, skills, behaviors, and attitudes they gained in training (Holton, Seyler, and Carvalho, 1997). Researchers have proposed conceptual models of the transfer process in an attempt to identify the variables that may affect whether the trainee chooses to use skills acquired in training back on the job. These models take into account various dimensions of the trainee's motivation to learn and transfer skills, the design of the training program and variables in the work environment that may inhibit or facilitate transfer.

One such model provided by Noe (1986), can be found in Appendix A. Noe hypothesized that the trainee's attitudes and attributes influence his/her motivation to learn and apply new skills in the work setting. Noe suggested a number of components in his model, including a dimension identified as environmental favorability. Environmental favorability is comprised of social and task components.

The social component is the ability of the trainee's supervisor and peers to provide him/her with the opportunity to use new skills and receive reinforcement and feedback. In general, it reflects the trainee's perception of work group supportiveness for training activities. The task component refers to the availability of the necessary tools, equipment and supplies required in the use of new skills. Noe hypothesized that a work environment that provides the necessary resources to perform tasks and the necessary social support will likely increase the trainee's motivation to not only learn new skills in training but also use them back on the job.

Noe's model was significant to the study of transfer because traditional theories of transfer stemmed from classical learning theory, which posited that transfer would occur as long as there were the same elements present in both the learning and work environments. Noe suggested the sphere of influencing factors contributing to transfer of training was broader than this and spawned additional research that attempted to support his model (e.g., Tizner, Haccoun, & Kadish, 1991; Facteau, Dobbins, Russell, Ladd, & Kudisch, 1995).

Another conceptual model of the transfer process is provided by Baldwin and Ford (1988). Their model describes the transfer process as being comprised of training inputs, training outcomes and conditions of transfer (see Appendix B). Training inputs include the characteristics of the trainee, the design of the training and the work environment. Training outcomes are learning and retention. The conditions of transfer refer to material learned in training being generalized back to the job and maintained over time.

Their notion of the conditions of transfer qualifies the definition of training transfer by asserting the distinction between generalization, the extent to which trained skills are exhibited in the transfer environment and maintenance, the length of time trained skills are continued to be used on the job.

The Work Environment Variable

Supervisor Support

Similar to Noe's model, the work environment variable in Baldwin and Ford's model is hypothesized to impact both the trainee's learning and retention as well as their transfer of training back on the job. In addition, the

work environment variable is described as being comprised of essentially the same components, social support and opportunity to use.

In Baldwin and Ford's review (1988), they revealed that the majority of research about transfer had focused on trainee characteristics and training design with very limited research conducted on the work environment variable. In studies that examined the work environment variable, supervisory support was cited as being the key variable in the work environment affecting the transfer process. This was based on findings of Fleishman (1953) and Huczynski and Lewis (1980).

The Fleishman (1953) study examined trainees in leadership training and measured the effect of perceptions of leadership climate on transfer of skills. They found that trainees returning to supervisors rated high in consideration exhibited more consideration. This same change was not found in trainee's returning to supervisors rated low in consideration.

The Huczynski and Lewis (1980) study involved trainees in a management training program. They found that the supervisor's attitude and management style were of crucial importance to the transfer of skills while peer and

subordinate relationships were found to be of lower importance. Other studies suggested that supervisory support is a multidimensional construct that could include goal-setting activities, reinforcement and modeling behavior (Baumgartel, Reynolds, and Pathan, 1984).

As a result of this review, Baldwin and Ford (1988) suggested that there was a need not only to operationalize the supervisor support variable but other work environment variables if researchers were to provide any guidance for practitioners in their efforts to improve transfer performance.

Transfer Climate

A study by Rouiller and Goldstein (1993) attempted to operationalize work environment variables by developing and testing an instrument designed to measure the transfer climate of the work environment. They identified eight dimensions of the transfer climate and classified them as either situational cues or consequence cues that would inhibit or help to facilitate transfer of training. Situational cues were described as workplace cues that remind the trainee of opportunities to use their new knowledge and skills, such as goal, social, task and self control cues. Consequence cues are those that trainees

receive after they apply their new knowledge and skills, such as positive feedback, negative feedback, punishment and no feedback. The trainees were assistant managers in a fast food restaurant chain who were randomly assigned to one of 102 units. Their results supported their hypothesis that different transfer climates existed in different units and had differentiating effects on trainee transfer behavior after controlling for learning and unit performance. Their results suggested that trainees perceive the transfer climate by means of psychological cues provided in the work environment.

The work of Rouiller and Goldstein (1993) represents one of the first attempts to identify an organizational climate for transfer that takes into account a variety of workplace elements that function simultaneously to either inhibit or facilitate the transfer of new skills. This research moved the study of the work environment variable forward by providing a new direction for its examination. However, their study left many questions unanswered. First, were there other important factors associated with the work environment that were not explored? Second, did the trainee's perception of the transfer climate depend on whether the situational and consequence cues came from the

trainee's supervisor or peers? The latter question was answered by a study carried out by Holton, Bates, Seyler, and Carvalho (1997) that attempted to validate Rouiller and Goldstein's transfer climate instrument.

Rouiller and Goldstein (1993) had been unable to validate their transfer climate instrument due to the limited sample size used in their study. One of the goals of the Holton et al. (1997) study was to validate Rouiller and Goldstein's eight-factor transfer climate structure by means of exploratory factor analysis. They also tested an expanded transfer climate instrument to determine if it would result in a factor structure of latent transfer climate constructs. Using 189 operating technicians from four production units at a petrochemical manufacturing facility, they measured the transfer of skills from a computer-based plant operator training program required by the Occupational Safety and Health Administration. Holton et al. used forty-nine of the original sixty-three items developed by Rouiller and Goldstein as fourteen of the items were inappropriate for the organization they were examining. They added seventeen new items that reflected the opportunity to perform construct, a dimension not measured by Rouiller and Goldstein. They conducted two

sets of factor analysis; one on the forty-nine items from the original Rouiller and Goldstein instrument and another on the entire sixty-six item instrument which included the seventeen new items. The results of the factor analysis revealed that the items loaded by organizational referent (either supervisor, peer/task or self), not by psychological cues (goal cues, social cues, and so on).

Their research also yielded a new construct they identified as "resistance" which suggested that work groups might resist the introduction of new skills in the work environment. These results suggested that a closer examination of support behaviors exhibited by the trainees' organizational referents might lead to a better understanding of how work environment variables affect transfer of new skills. Holton et al.'s (1997) findings are significant because they suggest that supervisor support may not be the only key element in the work environment to affect transfer behavior. Rather, the trainee may make the determination as to whom he or she will look to for support in using new skills learned in training.

Peer Support

While Holton et al.'s (1997) analysis included only supervisors and peers as referents; an examination of the training literature suggests that there may be many sources of social support for training. These include top management, supervisors, peers and subordinates (Baldwin & Ford, 1988; Noe, 1986; Noe & Schmitt, 1986).

A study by Facteau, Dobbins, Russell, Ladd, and Kudisch (1995) dissected the social support variable into the four components: subordinate, peer, supervisor and top management. The main focus of the study was to determine whether trainee's general beliefs about training affect pre-training motivation and transfer. Of interest are the results Facteau et al. (1995) obtained when the four components of social support were analyzed.

The subjects in the study were state government managers and supervisors involved in a management training program. As part of the study, trainees were asked to assess the extent to which top management, supervisors, peers or subordinates were supportive of their efforts to use new management skills on the job. The support dimension was broken down into the sub-dimensions of behaviors such as tolerance of mistakes, opportunity to use and positive

reinforcement. Using a series of LISREL analyses to test their model, Facteau et al.'s (1995) results indicated that supervisor support was negatively related to transfer and subordinate and peer support were positively related. Their explanation for this finding was that subordinate, top management and supervisor support functioned as suppressor variables that resulted from a multicollinearity problem between the independent variables.

However, Facteau et al. (1995) failed to offer an explanation for the zero-order correlations that clearly showed a stronger relationship between peer support and transfer behavior ($r = .56$) than supervisor support and transfer behavior ($r = .36$). Although not without its limitations, the Facteau et al. study does provide some evidence to dispute earlier claims that the supervisor's role in transfer of training is the key element in the work environment. A subsequent study by Seyler, Holton, Bates, Burnett, and Carvalho (1998) added further empirical support to this notion.

The Seyler et al. (1998) study examined the relationship between motivation to transfer skills and knowledge learned in a computer based training program and five groups of variables, one of which was the work

environment variable. The work environment variable included the dimensions of supervisor support, supervisor sanctions, peer support and opportunity to use. Using hierarchical regression, the last model entered for analysis was the work environment factors. While the addition of the total group of work environment variables was significant in explaining additional variance, supervisor support as a predictor variable was not significant. The zero-order correlation between supervisor support and motivation to transfer was significant, $r = .397$; the zero-order correlation between peer support and motivation to transfer was stronger, $r = .544$. These zero-order correlations were similar to those of Facteau et al.'s (1995). Seyler et al. (1998) surmised that this result might be explained by the cohesiveness of the work group involved in the study and noted that in a less cohesive environment, supervisor support may have exerted a stronger influence.

The similar findings of Facteau et al. (1995) and Seyler et al. (1998) are significant for two reasons. First, their findings might suggest that the supervisor is not the most powerful influence on trainee transfer behavior. Early studies examining the variables affecting

transfer strongly suggested that the supervisor was key to the trainee's use of new skills. This was in part because the studies did not contain other sources of social support as variables, the exception being the Huczynski and Lewis (1980) study which clearly identified supervisor over peer/subordinate support as being most important to transfer. Researchers such as Rouiller and Goldstein (1993) offered alternative conceptualizations of the work environment variable which encouraged others to begin studying how these variables might interact to affect transfer behavior. Subsequently, Holton et al. (1997) found that the trainee perceives the transfer climate by organizational referent. The Facteau et al. (1995) and Seyler et al. (1998) findings of stronger correlations between peer support and transfer behavior might be explained in part by the conclusions drawn in Holton et al.'s (1997) study. If the trainee viewed his/her peers as the individuals in the work environment that are looked to for cues as to whether or not use of new skills is accepted, then peers would have the stronger impact on training behavior. A question that has not been answered relating to the influence of supervisors and peers is why

the trainee might look for clues from his/her peers rather than the supervisor.

The second reason the results of these studies are significant can be found in what is revealed about the effect of supervisor support on transfer behavior when it is considered with other variables in the work environment. Based on Facteau et al.'s (1995) and Seyler et al.'s (1998) findings, the supervisor's effect on training transfer becomes non-significant when combined with other sources of social support. In most work circumstances, the trainee will have both a supervisor and peers. The supervisor's non-significant effect on transfer may not present a problem if both supervisor and peers support the trainee's use of new skills. However, if a trainee has a supportive supervisor and non-supportive peers, these studies suggest that the trainee will not use new skills. If the peers of the trainee have more influence over the trainee's use of new skills and peers exhibit resistance to training, such as the scale found in Holton et al.'s (1998) work, new skills may never be used rendering training programs potentially ineffective.

Inconsistencies in the Literature

The findings of the Facteau et al. (1995) and Seyler et al. (1998) studies are not only inconsistent with conclusions drawn from other research examining sources of social support but lack any explanation of why these inconsistencies may exist. In studies of transfer of training, the primary variable of interest is neither the work environment variable nor the sources of social support. This results in the measurement of numerous variables within one study and, in the case of Facteau et al.'s (1995) study, multicollinearity problems between the sources of social support.

In an effort to extend the limited research in the area of sources of social support and explore why inconsistencies in the literature exist, this study will examine four dimensions of social support and a moderating variable. First, it will focus on the differentiating effects of supervisors and peers on the trainee's transfer of training by measuring the constructs of social support and opportunity to use provided by the two different sources.

Second, this study will attempt to discover why there may be differentiating effects between supervisor and

peers on trainees by suggesting that the relationship between the supervisor or peer and transfer behavior is moderated by the frequency of contact the trainee has with the provider of the support. Research examining the impact of different organizational levels conducted by Ford, Quinones, Sego, and Sorra (1992) has suggested that variables closest to the trainee have the most influence on behavior. In their study, they examined graduates of an Air Force technical training program. The focus of the study was primarily concerned with operationalizing the opportunity to use variable, but also examined the effect of organizational level on transfer behavior. There were three levels examined: the unit or functional level, the work context level which included supervisor, peer and the pace of work flow, and the individual level. Their hypothesis, which was supported, was that the work context factors would have a stronger impact on transfer behaviors than the unit level because they were closer to the trainee. When these findings are applied to the current study, it would follow that if the trainee has more contact with his/her peers than with the supervisor, it will be the peer that has the most influence on inhibiting or facilitating transfer of training. The literature has

failed to measure the frequency with which the trainee interacts with the supervisor and peers, thus implying that exposure is equivalent. This study will explore why differentiating effects may exist by proposing frequency of contact as a moderating variable.

The study will use four different work environment dimensions as variables and examine their relationship to transfer behavior. The first two dimensions will be supervisor support and peer support. Identical components of the domain will be used to define the variable for each source. These components are positive feedback, modeling, and tolerance of mistakes. These components are commonly used in the transfer literature including the studies previously cited (Rouiller & Goldstein, 1993; Seyler et al., 1998; Facteau et al., 1998). In addition, they also represent behaviors that either a supervisor or peer are likely to demonstrate.

The effects of positive feedback and modeling to change behavior have been substantiated in many areas of research. In a review of the literature on feedback by Ilgen, Fisher, and Taylor (1979), they found that positive feedback serves to reinforce behaviors and the likelihood that they will be repeated because they provide the

individual with a sense of achievement and internal motivation. Even if the positive feedback does not lead to a tangible outcome, such as a wage increase, individuals appreciate knowing that they have done something well. The impact of social modeling on behavior change has been documented in the work of Bandura (1977) and suggests that individuals model the behaviors, attitudes and emotional reactions of others they observe. In results from a workplace study conducted by Sims and Manz (1982), it was found that employees tended to imitate supervisors who had power over them in order to gain rewards.

Tolerance of mistakes is being used as a component in this study because it demonstrates a type of support different from that of positive feedback. A supervisor or peer of the trainee may not provide positive feedback when the trainee demonstrates new skills, but may show support by demonstrating patience and assistance as the trainee tests new skills with somewhat inaccurate results.

The third and fourth dimensions will be supervisor opportunity to use and peer opportunity to use. This refers to the source allowing the trainee an opportunity to use the skills learned in training. This dimension will be defined using identical components of the domain for both

supervisor and peer and include sufficient time to complete tasks and appropriate tools, equipment and information and supportive working conditions. These sub-dimensions are consistent with those used in the transfer literature to measure the opportunity to use variable and have their roots in work done by Peters and O'Connor (1980) and originally introduced to the transfer literature in Noe's (1986) model. Peters and O'Connor (1980) identified eight categories of constraints that influenced an individual's motivation to perform a task. These constraints included: lack of skills to perform the task, lack of needed services from co-workers, insufficient job-related information, improper tools and equipment, inadequate budgetary support, unfamiliarity with the task, insufficient time to meet deadlines and poor physical working conditions. In the model of the transfer process proposed by Baldwin and Ford (1988), they looked at these constraints as situations in the work environment that could be controlled and avoided, thus creating the converse side of constraints which was then labeled opportunity to use. The components that have been selected to measure opportunity to use are the ones most appropriate for the work environment being examined in this study.

Hypotheses

Based on the findings of the research discussed, it is hypothesized that all of the dimensions will have a positive relationship with transfer of training. Additionally, it is predicted that this positive relationship will be stronger for the source that has the higher frequency of contact with the trainee. As an example, the effect of supervisor support on transfer of training will depend on frequency of contact between the trainees and their supervisors. Specifically, supervisor support may increase transfer of training to a greater extent when frequency of contact is increased.

Specifically, five hypotheses will be tested.

Hypothesis 1: There will be a positive relationship between supervisor support and transfer of training.

Hypothesis 1a: This relationship will be moderated by frequency of contact with the supervisor.

Hypothesis 2: There will be a positive relationship between supervisor opportunity to use and transfer of training.

Hypothesis 2a: This relationship will be moderated by frequency of contact with the supervisor.

Hypothesis 3: There will be a positive relationship between peer support and transfer of training.

Hypothesis 3a: This relationship will be moderated by frequency of contact with peers.

Hypothesis 4: There will be a positive relationship between peer opportunity to use and transfer of training.

Hypothesis 4a: This relationship will be moderated by frequency of contact with peers.

Hypothesis 5: After accounting for the variance due to the frequency of contact with the supervisor and peers, the supervisor social support and opportunity to use variables will have a stronger positive relationship with transfer of training than peer social support and opportunity to use.

CHAPTER THREE

METHODOLOGY

Participants

The Student Recreation Center (SRC) of a major research university agreed to allow their staff to participate in this study. The participants were male and female student employees (trainees) that attend the university and work part-time in the SRC. Six full-time supervisors also participated. Trainees' involvement in the research was voluntary. The sample was a mix of returning student employees that have been employed previously at the SRC and new student employees with no SRC experience. Of those reporting rehire status, 46% were re-hires and 54% were new hires. Females accounted for 55% of the sample and males 45%. The work shift for trainees averaged 15 hours per week.

The trainees reported to one of the six different supervisors participating in the study. The supervisors were responsible for one of the following work units: weight room, maintenance, front counter, intramural activities (with three sub-units; office, officials, and site), building stewards, or outdoor excursions.

There were 85 participants in the study. Based on power analysis (Cohen, 1992) for a medium effect size with six predictors, to obtain power of .80, a sample size of 97 is required. The actual sample size resulted in somewhat lower power than expected.

Procedures

Employee Training Program

Prior to the start of the school year, the trainees attended mandatory training as part of a new employee orientation program. The trainees received a minimum of ten hours of training conducted at the SRC and delivered in three sessions over the course of three days.

The training content of the first session provided instruction on tasks related to the trainee's specific work assignment and was conducted in the work area. Various instructional methods were used to deliver the training and included demonstration, lecture, and hands-on skill building exercises. As an example of unit specific training content, trainees assigned to the weight room received training on how to instruct patrons in the proper use and purpose of all equipment and were then required to demonstrate how the equipment is used. Trainees assigned

to the front counter received training in SRC enrollment procedures, cash register operation, credit card processing, and equipment rental procedures. Employees assigned as building stewards received training in the set-up and tear-down for all basketball and volleyball events and procedures for hosting events. The pre-test was administered at the beginning of this session and collected by the supervisor (see Appendix C).

The second and third sessions were delivered in the classroom and covered topics that applied to all SRC employees. The material included safety rules pertaining to emergencies such as fire or earthquake, appropriate employee conduct, dress code, and customer service skills. At the beginning of the second session, the trainees were given a briefing on the purpose of the study and told of their opportunity to participate. This training session involved multiple training methods such as lecture, role-play, discussion, and video. The post-test was administered at the end of the third session and collected by the Director. The post-test was identical to the pre-test.

Supervisor Training Program

The supervisors participating in the study attended a one hour training which focused on improving observation skills and rater accuracy. In this training, supervisors were presented with vignettes representing different levels of effectiveness and discussed the ratings they would assign to the employee depicted in the vignette. They also received instruction on how to document and organize observations of employee performance through the use of a structured diary.

Survey Distribution

Six weeks after the training was conducted, surveys were distributed to supervisors and trainees. This six week period allowed trainees time to demonstrate the new skills learned in training and gave supervisors an opportunity to observe the skills being used. Supervisors received the 10 item skill transfer measure to complete on each of the trainees he/she supervised. Supervisors were given one week to complete the surveys and return them to the Director. In addition, supervisors were asked to complete the transfer measure on trainees for whom they served as a secondary supervisor.

The SRC supervisors have overlapping responsibilities for the various units of the SRC. In many instances, trainees will begin their shift with one supervisor and end the shift with another. For purposes of this study, the supervisor with whom the trainee spent the majority of his/her workshift was designated as the primary supervisor and the other supervisor designated as secondary. By using a primary and secondary supervisor assessment of trainee job performance, inter-rater reliability was established with a significant correlation of $r = .366$, $p < .01$.

At this same six week mark, trainees desiring to participate in the study were given the consent form (see Appendix D), demographic survey, work environment survey and the skill transfer measure. The trainees were given the surveys at the beginning of the work shift and allowed 15 minutes to complete the surveys. Upon completion, trainees were instructed to place the surveys in the envelope provided and deposit the envelope in a collection box.

The SRC Director forwarded all completed surveys to a designated individual who was not involved in the study. This individual matched the supervisor skill transfer measures and the pre and post-tests with the surveys

completed by the trainees. After all the data was grouped by trainee, the actual names from all surveys and tests were removed and replaced with a numerical code. In this way the trainee and supervisor responses remained anonymous to the researcher. After survey collection, a debriefing statement was provided to all trainees and supervisors to explain the details of the study (see Appendix E).

Measures

Learning Measure

The trainees were given an identical pre and post-test which contained 27 items derived from the training material. Each item was given a value of 1 point for a maximum total score of 27. Items were fill-in-the-blank or multiple choice. The pre and post-tests were scored in the same manner by calculating the total number of correct items on the test.

Skill Transfer Measure

Supervisors rated the trainees' use of new skills on the job by means of a skill transfer measure (see Appendix F). Ten specific skills were measured and included five skills taught in the first session of training and five skills taught in the second session. Examples of skills

measured are as follows: "Wears the SRC uniform appropriately; staff shirt tucked in, closed-toed tennis shoes, appropriate pants/shorts" and "Routinely and efficiently completes official's evaluations." Items were scored on a 5-point Likert scale, with a score of 5 reflecting "Almost always" and a score of 1 reflecting "Almost never." The supervisors were qualified to assess the trainees' use of new skills as they created and delivered the training content for their specific units. They also attended the training on general topics along with their trainees.

The skill transfer measure was also completed by the trainees and was a self-report of their perception of the use of new skills. In order to minimize potential social desirability effects, the trainees were informed that their supervisors were completing the identical survey (see Appendix G). The alpha for the skill transfer measure completed by the trainee was .627. This alpha level may have been attributed to item 4 on the measure pertaining to the use of the radio. This item was not applicable to some of the units and trainees in these units left the item unmarked on their surveys.

Only the scores from the primary supervisor skill transfer measure were used to assess transfer of training. The Alpha Coefficient for the skill transfer measure completed by the primary supervisor was .832. Alpha for the skill transfer measure completed by the secondary supervisor was .873.

Work Environment Survey

This survey was comprised of eight scales measured with a total of 60 items (see Appendix H). The number of items comprising each scale and a sample item are presented in Appendix I. Responses to all of the items were made on a five point Likert-type scale with a score of 5 reflecting "Almost always" and a score of 1 reflecting "Almost never." The supervisor support scale, α = .892, and peer support scale, α = .869, were derived from the social support for training and peer support for training scales developed by Facteau (1997). The supervisor opportunity to use scale, α = .847, and peer opportunity to use scale, α = .841, were based on items selected from the eight categories of workplace constraints identified by Peters and O'Connor (1980). The categories used were lack of needed services from co-workers, insufficient job-related information, improper tools and equipment, insufficient time to meet

deadlines and poor physical working conditions. The items were reframed to reflect an opportunity to use skills rather than a constraint inhibiting the use of skills. Two scales were designed specifically for the study: frequency of contact with supervisor, α = .665, and frequency of contact with peers, α = .618. Each scale contained three items.

While cohesion is not specifically addressed in the hypotheses for this study, the Seyler et al. (1998) study suggested it could be a factor in explaining why peer influence on the trainee may be superior to that of the supervisor. For this reason, the measure of cohesion, α = .856, was included in the study for exploratory purposes. The scale used was based on a cohesion scale developed by Gilbert, Zaccaro, and Zazanis (1999).

A recent area of research focuses on means efficacy which is defined by Eden (1996, p.4) as "the individual's belief in the utility of the means available to him or her for performing the job…". A general means efficacy scale (GMES) has been developed (Agars & Kottke, 2003) to measure an employee's perception of the general availability of organizational resources necessary to complete job tasks. The items representing the seven dimensions of the GMES are

highly similar to the items found in the scales for supervisor support and opportunity to use and peer support and opportunity to use found in the work environment survey. If a relationship is found between the GMES and transfer, the GMES may serve as another tool for measuring the training transfer climate. For this reason, 16 of the 19 items from the GMES were included in work environment survey for exploratory purposes. Three of the items in the GMES were not applicable to the work environment being examined and were therefore deleted. The GME scale had an alpha of .808.

Demographic questionnaire

Information gathered on this questionnaire included the gender, work assignment, work shift, new hire or re-hire status, and hours worked per week (see Appendix J).

CHAPTER FOUR

RESULTS

Analysis and Data Screening

Prior to testing hypotheses, the data were screened with SPSS FREQUENCIES, SPSS REGRESSION, and SPSS MVA for accuracy of data entry and evaluation of assumptions. Missing data analysis was conducted on the variables used in the hypotheses. The missing data was examined to determine if it was missing completely at random. The Little's MCAR test was not significant, $\chi^2 = 64.052(4359)$, $p = 1.00$, indicating that the data may be missing completely at random. Due to the limited sample size, every case was needed for the analysis so cases with missing data were retained. Missing values were not imputed as scale scores were calculated by averaging across all item scores representing the scale.

One case was deleted from the data set as a result of the respondent marking all items extremely low causing outliers in the supervisor support, supervisor opportunity to use, peer opportunity to use, and employee self-assessment variables. Another case with an extremely low score on the skill transfer measure completed by the

secondary supervisory was found to be an outlier. After examination it was found that this individual received a low score from the primary supervisor as well. This case was retained, as the values appeared to represent a differentiation in performance level. Analysis was conducted on 84 cases. Conducting analyses using the learning co-variate resulted in a sample size of 66, as there was a substantial amount of missing data in the learning variable. As a result of the training design, supervisors of the units were responsible for administering pre and post-tests. Unfortunately this duty was not carried out appropriately in the intramural unit resulting in a substantial number of missing pre and post-tests. To determine the impact of this missing data on results, all analyses were repeated without the co-variate and no differential problems of power were found.

Appendix K contains a summary of the descriptive statistics and alphas for the variables. A review of the data for the hypothesized variables reveals means falling above the midpoint that would be expected and small standard deviations. For those scales found in the work environment survey, representing trainee responses; supervisor support, supervisor opportunity to use, peer

support, peer opportunity to use, cohesion, and general means efficacy, these above average means may be reflecting what is commonly found in the job attitude literature which proposes that employees who stay on their jobs typically have good attitudes toward their job. The above mid-point means on scales representing skill transfer may reflect the ease with which trainees mastered the skills taught in training due to the low difficulty level of the tasks.

As most respondents gave high ratings to most of the items, this was reflected in the skewness of the variables. Distributions for three of the variables were kurtotic with a leptokurtic shape. As regression analyses are robust and not as sensitive as other analytical methods to the mild skewness and kurtosis of variables, no transformations were made. Scatterplots of residuals and predicted scores revealed that the assumptions of linearity and homoscedasticity were met. A review of bi-variate correlations did not reveal signs of multicollinearity.

Reliabilities were calculated for all scales, the supervisor ratings, and the trainee self-assessments. In calculating the reliabilities, the peer opportunity to use scale originally had an alpha of .495. By deleting one item pertaining to the peer's ability to provide

information about the skills learned in training, the alpha increased to .841. This item was not used in the analysis.

For all of the primary analyses, the score given by the primary supervisor on the skill transfer measure represented the dependent variable, transfer of training. The secondary supervisor and the trainee also completed the skill transfer measure. Ratings given by the secondary supervisor have a moderate significant correlation with the primary supervisor ratings, $r = .366$, $p < .01$. This would indicate inter-rater reliability and lend support to the accuracy of the ratings provided by the primary supervisor. The primary supervisors were also best qualified to assess transfer skills as they spent the majority of the workshift with the trainee. The self-assessment ratings given by the trainees were not significantly correlated with either the primary or secondary supervisor, $r = .162$ and $r = .222$, respectively. The trainee's self-assessment is reflecting their perceptions of their performance rather than actual performance. Social desirability may have also influenced self-assessment ratings. Intercorrelations between all variables are provided in Appendix L.

The amount of knowledge the trainee gained as a result of the training was identified as a learning score that was

calculated by subtracting the pre-test score from the post-test score. The learning score was used as a covariate so that the variance in the transfer of behavior to the work environment attributed to learning could be accounted for. In comparing the learning scores of rehires and new hires, there was no significant difference found.

Hypothesis One

Hypothesis 1 proposed that there would be a positive relationship between supervisor support and the transfer of training. Hypothesis 1a posited that this relationship would be moderated by the frequency of contact the trainee had with the supervisor.

A significant correlation was found between supervisor support and transfer of training, $r = .328$, $p < .01$. To control for learning, a hierarchical regression was run entering the learning score in block one and supervisor support in block two. Support was found for hypothesis 1. After controlling for learning, supervisor support significantly improved prediction of transfer of training, R^2 change $= .080$, $F_{inc}(1,64) = 6.871$, $p < .05$, indicating approximately 8% of the variance in transfer of training was accounted for by supervisor support.

For every 1 unit increase in supervisor support, it is predicted that the transfer of training score will increase by .210 in a model that contains the learning score. unstandardized regression coefficient B = .210, t (64) = 2.621, $p < .05$. Appendix M provides the R, R^2 change, and unstandardized regression coefficient B after entry of each block.

To test the moderating effect of frequency of contact predicted in hypothesis 1a, another hierarchical regression was conducted. The first block entered was the learning score, supervisor support and supervisor frequency of contact were entered in the second block, and the final block added to the model was the multiplicative value between supervisor support and frequency of contact with the supervisor. This hypothesis was not supported; the interaction did not significantly improve prediction, R^2 change = .006, $F_{inc}(1,62) = .505$, $p > .05$.

Hypothesis Two

Hypothesis 2 proposed that there would be a positive relationship between the supervisor opportunity to use variable and the transfer of training. Hypothesis 2a

posited that this relationship would be moderated by the frequency of contact the trainee had with the supervisor.

A significant correlation was found between supervisor opportunity to use and transfer of training, $r = .405$, $p < .01$. To control for learning, a hierarchical regression was run entering the learning score in block one and supervisor opportunity to use in block two. Support was found for hypothesis 2. After controlling for learning, supervisor opportunity to use significantly improved prediction of transfer of training, R^2 change = .143, $F_{inc}(1,64) = 13.465$, $p < .01$, indicating approximately 14.3% of the variance in transfer of training was accounted for by supervisor opportunity to use. For every 1 unit increase in supervisor opportunity to use, it is predicted that the transfer of training score will increase by .320 in a model that contains the learning score. Unstandardized regression coefficient B = .320, t (64) = 3.669, $p < .01$. Appendix N provides the R, R^2 change, and unstandardized regression coefficient B after entry of each block.

To test the moderating effect of frequency of contact predicted in hypothesis 2a, another hierarchical regression was conducted. The first block entered was the learning

score, supervisor opportunity to use and supervisor frequency of contact were entered in the second block, and the final block added to the model was the multiplicative value between supervisor opportunity to use and frequency of contact with the supervisor. This hypothesis was not supported; the interaction did not significantly improve prediction, R^2 change = .025, $F_{inc}(1,62) = 2.425$, $p > .05$.

Hypothesis Three

Hypothesis 3 proposed that there would be a positive relationship between peer support and the transfer of training. Hypothesis 3a posited that this relationship would be moderated by the frequency of contact the trainee had with the peer.

A significant correlation was found between peer support and transfer of training, $r = .321$, $p < .05$. To control for learning, a hierarchical regression was run entering the learning score in block one and peer support in block two. Support was found for hypothesis 3. After controlling for learning, peer support significantly improved prediction of transfer of training, R^2 change = .049, $F_{inc}(1,64) = 4.057$, $p < .05$, indicating approximately 4.9% of the variance in transfer of training

was accounted for by peer support. For every 1 unit increase in peer support, it is predicted that the transfer of training score will increase by .139 in a model that contains the learning score. Unstandardized regression coefficient B = .139, t (64) = 2.014, $p < .05$. Appendix O provides the R, R^2 change, and unstandardized beta after entry of each block.

To test the moderating effect of frequency of contact predicted in hypothesis 3a, another hierarchical regression was conducted. The first block entered was the learning score, peer support and peer frequency of contact were entered in the second block, and the final block added to the model was the multiplicative value between peer support and frequency of contact with peers. This hypothesis was not supported; the interaction did not significantly improve prediction, R^2 change = .019, $F_{inc}(1,62) = 1.541$, $p > .05$.

Hypothesis Four

Hypothesis 4 proposed that there would be a positive relationship between peer opportunity to use and the transfer of training. Hypothesis 4a posited that this

relationship would be moderated by the frequency of contact the trainee had with the peer.

There was not a significant correlation between peer opportunity to use and transfer of training, $r = .200$, $p > .05$. To control for learning, a hierarchical regression was run entering the learning score in block one and peer opportunity to use in block two. Not surprisingly, after controlling for learning, peer opportunity to use did not significantly improve prediction of transfer of training, R^2 change = .042, $F_{inc}(1,64) = 3.440$, $p > .05$. Hypothesis 4 was not supported. Appendix P provides the R, R^2 change, and unstandardized regression coefficient B after entry of each block.

To test the moderator effect of frequency of contact predicted in hypothesis 4a, another hierarchical regression was conducted. The first block entered was the learning score, peer opportunity to use and peer frequency of contact were entered in the second block, and the final block added to the model was the multiplicative value between peer opportunity to use and frequency of contact with peers. This hypothesis was not supported; the interaction did not significantly improve prediction, R^2 change = .024, $F_{inc}(1,62) = 1.928$, $p > .05$.

Hypothesis Five

Hypothesis 5 had predicted that after accounting for the variance in transfer of training as a result of frequency of contact with supervisor and peers, there would be a stronger positive relationship with the supervisor variables than with peer variables. Hypothesis 5 was tested by conducting a hierarchical regression. In the first block, frequency of contact with supervisor and frequency of contact with peers were entered. The second block contained the supervisor support, supervisor opportunity to use, peer support, and peer opportunity to use.

The supervisor and peer variables significantly improved prediction of transfer of training in a model containing frequency of contact, R^2 change = .181, $F_{inc}(4,70) = 3.919$, $p < .01$. The amount of variance in transfer of training accounted for by these variables is 18.1% after accounting for frequency of contact. An examination of the regression coefficients reveals that the only significant support variable is supervisor opportunity to use, unstandardized regression coefficient B = .456, t (70) = 2.532, $p < .01$. Appendix Q presents the R, R^2 change, and unstandardized regression coefficient B after entry of each

block. Hypothesis 5 is partially supported by these findings as only one of the supervisor variables, opportunity to use, was found to significantly improve prediction of transfer of training after accounting for frequency of contact.

Additional Analyses

t-Test Analysis

To examine whether there was a significant difference in the mean frequency of contact trainees experienced between supervisors and peers, with means of 3.54 and 4.04 respectively, a repeated measures t-test was conducted. Results indicated that trainees experienced a significant difference in the amount of contact between the two groups, $t\ (83) = -5.00$, $p < .01$. Trainees spent significantly less time with their supervisors than peers and yet the supervisors had more effect on the transfer of training.

Regression Analyses with the Self-Assessment Measure

To examine how the supervisor support and peer support variables effect perceived transfer of training as measured by the trainee self-assessment, hypotheses 1, 2, 3, 4 and 5 were analyzed using the trainee self assessment as the dependent variable. Separate hierarchical regression

analyses were conducted for each of the four support variables and yielded some interesting results. The learning variable was entered as the first step in each analysis and did not significantly account for any variance in the transfer of training. This result runs contrary to the findings from the analyses using the supervisor's ratings as the measure of transfer in which learning accounted for 17.5% of the variance.

Hypothesis 1. After controlling for learning, supervisor support significantly improved prediction of transfer of training, R^2 change = .232, $F_{inc}(1,64) = 19.478$, $p < .01$, indicating approximately 23.2% of the variance in perceived transfer of training was accounted for by supervisor support. Unstandardized regression coefficient B = .374, t (64) = 4.413, $p < .01$.

Hypothesis 2. After controlling for learning, supervisor opportunity to use significantly improved prediction of transfer of training, R^2 change = .177, $F_{inc}(1,64) = 13.909$, $p < .01$, indicating approximately 17.7% of the variance in perceived transfer of training was accounted for by supervisor opportunity to use. Unstandardized regression coefficient B = .374, t (64) = 3.730, $p < .01$.

Hypothesis 3. After controlling for learning, peer support significantly improved prediction of transfer of training, R^2 change = .106, $F_{inc}(1,64) = 7.683$, $p < .01$, indicating approximately 10.6% of the variance in perceived transfer of training was accounted for by peer support. Unstandardized regression coefficient B = .215, t (64) = 2.772, $p < .01$.

Hypothesis 4. After controlling for learning, peer opportunity to use significantly improved prediction of transfer of training, R^2 change = .105, $F_{inc}(1,64) = 7.580$, $p < .01$, indicating approximately 10.5% of the variance in perceived transfer of training was accounted for by peer opportunity to use. Unstandardized regression coefficient B = .228, t (64) = 2.753, $p < .01$.

Hypothesis 5. After accounting for learning, supervisor support, supervisor opportunity to use, peer support, and peer opportunity to use significantly improved prediction of transfer of training, R^2 change = .241, $F_{inc}(1,64) = 4.714$, $p < .01$, indicating approximately 24.1% of the variance in perceived transfer of training was accounted for by the four support variables. An examination of the regression coefficients revealed the only significant variable to be supervisor support,

unstandardized regression coefficient B = .390, t (64) = 2.077, $p < .05$.

A comparison of effect sizes would indicate that the hypothesized variables accounted for more variance in perceived transfer than observed transfer (Appendix R).

Regression Analyses with Rehire Status

Zero order correlations between transfer of training and the four support variables were also reviewed as a function of rehire status (see Appendix S). For rehired trainees, there were two significant correlations found between transfer of training and the support variables. In the case of new trainees, there were three significant correlations found and the correlations appeared to be somewhat stronger than those of the rehires. Based on these correlations, a moderating effect attributed to rehire status was explored by conducting separate hierarchical regression analyses for each of the support variables using the primary supervisor's ratings as the dependent variable. In the first block, the learning variable was entered. The second block contained the support variable and rehire status variable. The last block entered was the interaction between the support variable and the rehire variable. A moderating effect was

found for both the supervisor and peer opportunity to use variables suggesting that these support variables had a stronger effect on transfer for new trainees than rehired trainees.

After controlling for learning, supervisor opportunity to use, and rehire status, the interaction between supervisor opportunity to use and rehire status significantly improved prediction of transfer of training, R^2 change = .073, $F_{inc}(1,62) = 7.508$, $p < .01$, unstandardized regression coefficient B = .242, t (62) = 2.740, $p < .01$.

After controlling for learning, peer opportunity to use, and rehire status, the interaction between peer opportunity to use and rehire status significantly improved prediction of transfer of training, R^2 change = .062, $F_{inc}(1,62) = 5.431$, $p < .05$, unstandardized regression coefficient B = .187, t (62) = 2.331, $p < .05$.

These results are significant as they indicate a differentiating effect of support variables on trainees dependent on their length of experience at the SRC.

Regression Analyses with General Means Efficacy

The general means efficacy scale is significantly, positively correlated with all four of the support variables (see Appendix L). A hierarchical regression

analysis was conducted to determine if the supervisor support variables were able to account for variance in training transfer above that accounted for by general means efficacy. The first block entered was the learning variable. The second block entered was the general means efficacy variable. General means efficacy significantly accounted for variance in transfer after accounting for learning, R^2 change = .095, $F_{inc}(1,64) = 8.374$, $p < .05$. Finally, the third block entered was the supervisor support and supervisor opportunity to use variables. These variables significantly accounted for variance in transfer after accounting for learning and general means efficacy, R^2 change = .070, $F_{inc}(2,62) = 3.288$, $p < .05$. An examination of the betas reveals the supervisor opportunity to use variable to be the only significant predictor, unstandardized regression coefficient B = .399, t (62) = 2.286, $p < .05$. Appendix T provides the R, R^2 change, and unstandardized regression coefficient B after entry of each block. An identical hierarchical regression was conducted substituting the peer support variables for the supervisor variables and no significant results were found.

Next, a regression analysis was conducted using the four support variables and the general means efficacy

score. These variables accounted for significant variance in training transfer, $R^2 = .193$, $F_{inc}(5,71) = 3.390$, $p < .01$. A review of the regression coefficients reveals that the only significant predictor of transfer was the supervisor opportunity to use variable, unstandardized regression coefficient B = .416, t (71) = 2.334, $p < .05$ (see Appendix U).

Hierarchical Regression Analysis with Cohesion

In the Seyler et al. (1998) study, work group cohesion was offered as an explanation for peer support exerting a stronger influence than supervisor support on the transfer of training. For this reason, the variable was examined in this study. A hierarchical regression analysis was conducted entering supervisor support and cohesion in the first block and the interaction between the two variables in the second block. The primary supervisor ratings were used as the dependent variable. There were no significant results discovered as a result of this analysis.

CHAPTER FIVE

DISCUSSION

The main purpose of this study was to examine the influence of supervisors and peers on the transfer of training and attempt to explain inconsistencies in the literature by introducing the notion that the trainee's frequency of contact with supervisors or peers may moderate the relationship with transfer. While the moderating effect was not found, four of the five hypotheses were supported and additional analyses revealed several novel and significant findings.

Overall, findings support previous research that denote the supervisor as the key variable in the work environment affecting the transfer of training. The current study also extends the transfer research in three unique ways. First, results suggest that the effect of support variables on transfer vary dependent upon how transfer is measured. Measures capturing perceived transfer showed stronger effects of support than did measures capturing observations of transfer behaviors. Second, findings indicate that the trainee's length of service may influence the effect of supervisor support on the transfer of

training. Finally, a new construct is introduced which reveals a positive relationship with training transfer and serves to underscore the strong influence of the supervisor variable.

Previous research has measured the effect of work environment variables on transfer of training by measuring the trainee's intent to transfer or transfer motivation. The current study measured transfer by two means; an objective measure reported by the primary supervisor and a measure capturing perception of transfer as reported by the trainee.

When the perceived transfer and observed transfer measures were used as dependent variables in separate regression analyses, differential effect sizes were found for the support variables. The variables accounted for more variance in training transfer as measured by the trainee self-assessment than by the primary supervisor assessment. Another interesting result was discovered when a comparison of the variance accounted for by learning was made between the two measures. In analyses using the measure of perceived transfer, learning did not significantly account for variance in training transfer whereas in the analyses using observed transfer, the

opposite was found. It is worth noting, however, that there may have been method bias in using the self-report of transfer.

The lack of significance of the learning variable was also reported in the study conducted by Seyler et al. (1998), in which transfer was measured with a scale of motivation to transfer. In this case, Seyler et al. attributed the lack of significance to a deficient learning measure. Seyler et al. cited several problems with the measure including range restriction and questionable content validity. In light of the current study, the measure of transfer may have been the reason for the insignificance of the learning variable as it was a self-report instrument.

Despite the unsupported hypotheses of the moderating effect of frequency of contact, a moderating effect was found with the rehire variable. An examination of the effect of trainee tenure on transfer is not apparent in the training transfer literature. The results from this study suggest that supervisor and peer support are more influential on transfer for new trainees than rehired trainees. This is an important finding as many organizations provide a substantial amount of training to

new hires in order to accelerate their productivity. The results of this study would suggest that supportive behaviors can be especially effective during this new hire period.

The significant findings of a relationship between general means efficacy and transfer of training is noteworthy as it may provide researchers with a new means of examining transfer. The construct captures the multidimensionality of the work environment variable in a very succinct fashion. General means efficacy and the supervisor support variables were shown account for variance in training transfer. However, results of the hierarchical regression show significant variance accounted for by the supervisor variables after accounting for general means efficacy, providing further evidence of the strong impact of the supervisor on training transfer.

The findings from this study also reveal that despite the trainee's less frequent contact with the supervisor, the supervisor impact on training transfer was significant. This again alludes to a supervisory effect so strong that even minimal supervisor contact with the trainee can be enough to insure transfer. This notion would be congruent with findings from a study by Brinkerhoff and Montesino

(1995) in which training transfer was compared between two groups; one group participated in pre and post training meetings with their supervisor to discuss the training and the control group did not. Results revealed that the experimental group reported a higher level of training transfer. What is notable about the findings is that the meetings that took place were only 15 minutes in length.

Taken together these findings provide new insights for increasing training transfer and offer new opportunities for future research. However, the study is not without limitations.

Limitations

Clearly, this study had several limiting factors. First, although participants were assured of confidentiality, they were required to put their name on each of the surveys in order to link the data from each of the instruments together for data analysis. Participants may have feared that supervisors would see the responses causing inflation of the ratings, particularly on the work environment measure.

The content of the training itself may have also been a limiting factor in the study. The skills measured did

examined the relationship between the work environment and transfer of training. In 1997, Ford and Weissbein reported on nine additional studies on the topic. This is encouraging, as this would indicate research efforts in this area have more than doubled in ten years. The current study provides the foundation for new directions in future research.

The significant interactions found in this study between support variables and rehire status, would suggest that the relationship between a trainee's length of service and training transfer warrants further examination. For the new hire group, the lack of exposure or experience with tasks may have made the support variables a more important factor in training transfer than for the rehired group. It would be important to know if the type or frequency of support for trainees needs to differ dependent on their familiarity or exposure to the new task being learned.

Other variables that may moderate the relationship between supervisor and peer support and training transfer should be examined. While this study found no significant effect of frequency of contact as a moderator, another moderator to be considered is the perceived credibility of the source of support. Ilgen, et al. (1979) contend that

the source of feedback may be the most important influence on the extent to which the feedback is accepted. They posited that, in part, this influence was attributed to the degree of credibility the recipients attribute to the source. It is quite possible that in some work environments peers may be seen as more credible than supervisors, thus explaining findings from previous studies that show higher correlations with peers than supervisors with transfer of training.

As the general means efficacy scale was found to be significantly correlated with the transfer of training, further exploration of its use as a measure of transfer climate might yield interesting results. An expansion of the transfer climate work done by Rouillier and Goldstein (1993) and Holton et al. (1997) could be realized by employing the GMES as a measure of transfer climate. Measures of transfer climate found in the literature have been inconsistent concerning the factors that comprise the climate (Rouillier & Goldstein, 1993; Holton et al., 1997). The use of the GMES as a climate measure could extend research in this area.

Finally, a statistical approach allowing for the examination of several work environment variables in the

same model, such as can be accomplished with structural equation modeling, would provide a more comprehensive perspective on the variables and their impact on transfer.

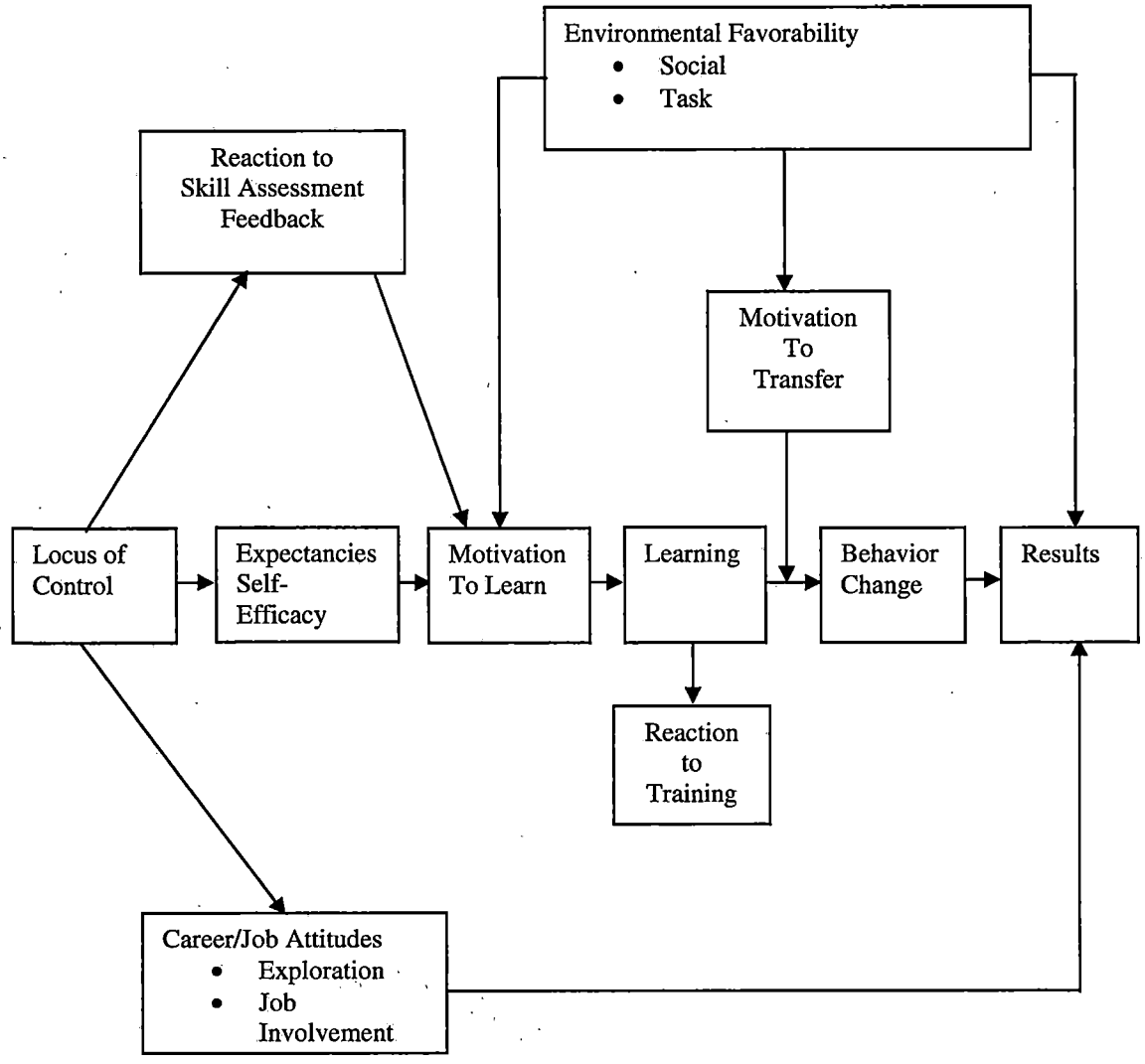
In today's competitive business environment, one of the only advantages an organization has is the skill of a well trained workforce. Themes emerging from the transfer literature, and supported by this study, would suggest that organizations can maximize their training investment and increase the skills of their workforce by creating work environments that are conducive to transfer. It is incumbent upon researchers to provide the prescriptive means by which these work environments are created.

APPENDIX A

MOTIVATIONAL INFLUENCES ON TRAINING EFFECTIVENESS

Motivational Influences on Training Effectiveness

(from Noe, 1986, p. 738)

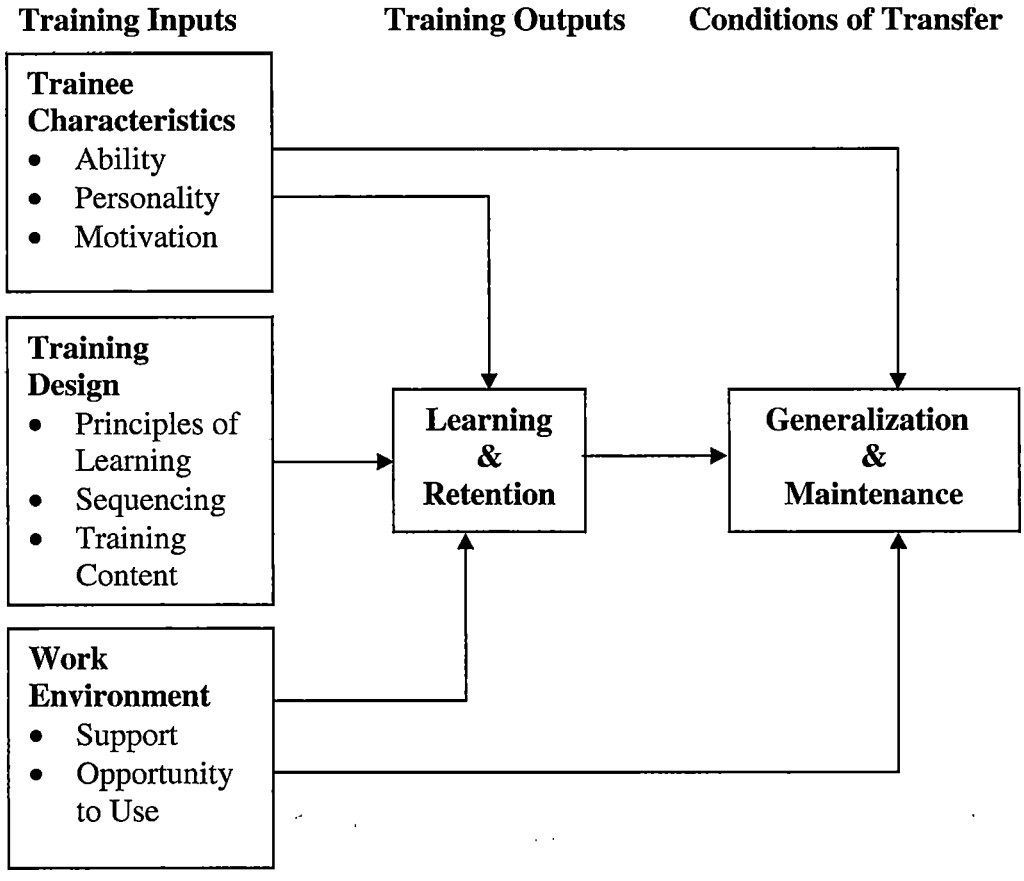


APPENDIX B

MODEL OF THE TRANSFER PROCESS

Model of the Transfer Process

(from Baldwin and Ford, 1988, p. 65)



APPENDIX C

PRE AND POST TEST

Name: _____

Unit: _____

TEST YOUR KNOWLEDGE

To help you get the most out of the Student Recreation Center Orientation Training Program, please take a moment and answer the following questions. Don't worry if there is something you don't know, that's why you're in this training! This will help you assess your level of knowledge and guide your attention to topics of the training with which you may be unfamiliar.

Core Items

1. What are three behaviors that an SRC employee must demonstrate to be successful in their job?

_____

_____

_____

2. List three types of recreational programming offered by the SRC

_____

_____

_____

3. List three things you need to do to be in compliance with the SRC dress code.

_____

_____

_____

4. Who is allowed behind the front counter of the SRC?

   a. Any staff member wearing a staff shirt.
   b. Counter clerks
   c. Supervisors only
   d. All of the above

5. When using the SRC Emergency Code System, emergencies involving sprains, strains or bodily fluids are:

a. Code Red
b. Code Orange
c. Code Blue
d. None of the above

6. Which two radio channels does the SRC use?

a. 1 and 2
b. 2 and 3
c. 3 and 4
d. None of the above

7. What form do you need to fill out if your report to work late?

_____

8. What are the 4 steps of good customer service?

_____

_____

_____

_____

9. What are the 4 steps in dealing with a disgruntled customer?

_____

_____

_____

_____

10. What do you need in order to clock in for your shift?

_____

Unit Specific Items – Building Stewards

11. How often are bathroom cleanliness checks conducted?

    a. Every 15 minutes
    b. Every 30 minutes
    c. Every 60 minutes
    d. Once a day

12. It is permissible to site in the storage room behind the front counter

    a. To complete paperwork
    b. When there are not many people in the SRC
    c. Any time
    d. Never

13. At what time should you start the closing procedure?

    a. At least 15 minutes before closing.
    b. One hour before closing.
    c. 45 minutes before closing.
    d. All of the above.

14. When making your rounds, you must look for:

    a. Appropriate footwear worn on wooden floors.
    b. Food or drink in the gymnasium.
    c. Damage to the facility.
    d. All of the above

15. List three things that should be done for clean up after a special event.

    a. Insure bleachers remain in place.
    b. Mop tarps.
    c. Sweep the gym floors.
    d. All of the above.
    e. B and C

Unit Specific Items – Outdoor Excursions

11. The main job of the staff is to ensure a fun time is had by all.

    e. True
    f. False

12. Every element must be spotted.

    a. True
    b. False

13. Before anyone can participate in the program they must have a

    _____

14. Before a climber may climb, they must ask for

    _____

15. A belayer must have an anchor when the climber out weights the belayer by more than _____ pounds.

Unit Specific Items - Front Counter

11. You must check the shoes of customers checking out:

    a. Ping-pong rackets
    b. Squash goggles
    c. Basketballs
    d. All of the above
    e. A and C

12. Front counter staff complete transactions for:

    a. Outdoor excursions
    b. SRC memberships
    c. Leisure Line classes
    d. B and C
    e. All of the above

13. Front counter staff may leave the front counter

    a. to deliver urgent messages to members of SRC management.
    b. only if there is coverage for the front counter.
    c. at no time during their shift.
    d. to assist customers when necessary.

14. You may study while working at the front counter

    a. for up to one hour during your shift.
    b. only if there are not any customers.
    c. at no time.

15. An individual may use which of the following as collateral for equipment check out.

    a. Driver's License
    b. Student I.D.
    c. Twenty-five dollar deposit
    d. All of the above

Unit Specific Items - Intramurals Site Staff

11. What other forms of ID are acceptable for faculty/staff members to use when checking in for a game?
    a. Current drivers license
    b. Current drivers license and pay stub
    c. Passport and Verification of Employment
    d. Passport
    e. B and C

12. What is NOT an approved form of clothing?
    a. Sweatpants
    b. Soft Headband
    c. Wedding band
    d. Sleeveless shirt

13. Choose the correct statement:
    a. Penalties in football are assessed to the individual and recorded as such.
    b. Statistics on free throws are not important.
    c. The running score is the most important aspect of each score sheet.
    d. There are no statistics to keep for volleyball.

14. If everything in a night went well, with not ejections or injuries, then there is something to report on the back of the Daily Report Form.
    a. True
    b. False

15. If football games are scheduled to start at 6:40pm and you are the Site Supervisor, how long before game time should you be at the field level setting up?
    a. 15 minutes
    b. 30 minutes
    c. 45 minutes
    d. 60 minutes
    e. 75 minutes

Unit Specific Items - Intramurals Head Officials

11. It is your responsibility to watch the game officials for the 7:00pm game if you have a game at 8:00pm and want to talk with your teammates.
    a. True
    b. False

12. The daily evaluation on the Daily Report should be completed:
    a. Every other day
    b. Every day
    c. Every hour
    d. Once a week

13. As the head official observing a game, you notice that a participant is playing while wearing denim pants with pockets. You:
    a. Stop the game immediately.
    b. At the next stoppage of play inform him/her that those pants are not allowed in Intramural Sports play.
    c. At the next stoppage of play inform the lead official that there is a participant with illegal pants on and to take care of the situation.
    d. Don't bother any one
    e. At the next stoppage of play inform the lead official that there is a participant with illegal pants on assist that official with informing the participant of the attire policy.

14. You notice an official making a bad call while being out of position. You:
    a. Just chalk it up to being a bad official.
    b. Make a report to insure that official does not work again.
    c. At the next stoppage of play inform that official of the error and attempt to make it into a learning experience.
    d. Wait for the end of the game/half time, ask the official for their interpretation of the play, and present an alternate approach to officiating similar experiences.

15. A participant is laying into one of your officials for making a bad call just after half time. You watched the play and the call was questionable. What do you do?
    a. Step in right away and say the official is wrong
    b. Nothing.
    c. Observe the situation to make sure the official can continue to officiate, removing the official from the game if necessary.
    d. Observe the situation to make sure the comments do not get out of control, assisting in controlling the participant if necessary.
    e. Step in right away and say the participant should walk away.

Unit Specific Items - Intramurals Office Managers

11. Do you have the authority to make decisions regarding weather conditions?
    a. Yes
    b. No

12. What is the first thing you do when your office shift begins?
    a. Check to make sure the computer is on. Then check my email.
    b. Check to make sure the computer is on.
    c. Check the report bins to make sure the reports from the previous night have been input and filed.
    d. Look through the score sheets from the previous nights to see who won.

13. What is one of the last things you should do before you close the office at 6:00pm?
    a. Submit a Spectator List to the Front Counter
    b. Make sure there is no one in the office.
    c. Make sure the game sheets for the current night are printed and placed in the appropriate notebooks.
    d. Make sure all large pieces of paper or trash are in the correct places, empting the correct receptacles when necessary.
    e. All of the above.

14. A team is submitting a roster for basketball with 12 names on the list. The waiver is signed, the manager information is completed, but 8 of the 12 names are missing information. What is the correct procedure?
    a. Return the roster to the team representative turning in the form, inform him/her that there is not enough player information and that they need one more player's information and the whole form will be acceptable.
    b. Give the team a time slot anyway because the minimum number of players necessary for basketball is four.
    c. Shred the form and tell them to fill out another one.
    d. Return the roster to the team representative turning in the form, inform him/her that there is not enough player information and that they need one more player's information and only those five players will be allowed to play until the other team members come in and complete the rest of the information.

15. A participant calls on the phone and begins to complain about the officiating in last night's game. What do you do?
    a. Tell them we do our best to get qualified officials.
    b. Tell them there is nothing you can do and hang up.
    c. Tell them there is an Official's Evaluation form online that is sent directly to the Coordinator of Officials.
    d. Tell them nothing can be completed over the phone and they must come into the office.

Unit Specific Items – Weight Room

11. The use of a towel in the weight room is

    a. recommended, but not mandatory.
    b. mandatory.
    c. up to the customer.

12. Backpacks may be brought into the weight room

    a. if they are secured away from the equipment.
    b. if they are kept with the customer in order to reduce the possibility of theft.
    c. under no circumstances.

13. When administering CPR, the compression-to-breath ratio is

    a. 5:1
    b. 15:2
    c. 15:1

14. When spotting a flat bench dumbbell press, the point where you offer assistance is

    a. at the elbows.
    b. at the wrists.
    c. at the dumbbell handle.

15. When cleaning the equipment

    a. only the pads need to be cleaned daily.
    b. only the upholstery needs to be cleaned daily.
    c. pads and upholstery need to be cleaned weekly.

Unit Specific Items – Maintenance

11. Before mopping a floor, what should you bring out first?

    a. Mop and bucket
    b. Wet floor signs
    c. Caution tape to section off the area being mopped

12. When changing lights, where does the old fluorescent tube get placed?

    a. Round barrel provided by EH & S
    b. Round barrel provided by Physical Plant
    c. In the trash

13. What should you check out oat the front counter after you punch in?

    a. Cleaning equipment
    b. Radio
    c. Uniform

14. What should you do before you get ready to leave?

    a. Make sure all tools and work area are picked up
    b. Clock out
    c. Return your uniform

15. When do you wear your uniform?

    a. Only when there are patrons in the SRC
    b. At your discretion
    c. At all times when you are on the clock

APPENDIX D

INFORMED CONSENT

Training Effectiveness Study

INFORMED CONSENT

You are invited to participate in a study designed to investigate why training is effective. This study is being conduct by Sue Anderson under the supervision of Dr. Janelle Gilbert, Professor of Industrial/Organizational Psychology. This study has been approved by the Department of Psychology Institutional Review Board Sub-Committee of the California State University, San Bernardino, and this consent form should bear a copy of the official Psychology IRB stamp of approval.

Each year U.S. organizations spend over $50 billion on formal training programs. In an effort to improve our understanding of why training works or fails, I am conducting a study on some factors that can influence training effectiveness. In this study you will be asked to respond to two surveys. The Skill Usage survey, should take about 5 to 10 minutes to complete. The Transfer of Training Climate Survey should take about 5 to 10 minutes to complete. All data will be reported in group form only. There are no immediate or long-range risks to participants in this study, nor direct benefit for your participation. You may receive the group results of this study upon completion on January 2005 by contacting Sue Anderson at (909) 880-5587.

Your participation in this study is totally voluntary. You are free not to answer any question and withdraw at any time during this study without penalty. When you have completed the Skill Usage survey and Transfer of Training Climate Survey, you will receive a debriefing statement describing the study in more detail. In order to ensure the validity of the study, we ask that you not discuss this study with other students or participants.

If you have any questions or concerns about this study, please feel free to contact Dr. Janelle Gilbert at (909) 880-5587.

By placing a check mark in the box below, I acknowledge that I have been informed of, and that I understand, the nature and purpose of this study, and I freely consent to participate. I also acknowledge that I am at least 18 years of age.

Place a check mark here

Today date: _____

APPENDIX E

DEBRIEFING STATEMENT

DEBRIEFING STATEMENT

Thank you for taking the time to participate in this study. The purpose of this study was to gain a better understanding of how peers and supervisors encourage or inhibit employees' use of skills learned in training. If you have any questions regarding the nature of this study or would like to receive a copy of the results when they become available, please contact Sue Anderson or Dr. Janelle Gilbert at (909) 880-5587. The results of the study will be reported in group form only.

APPENDIX F

SKILL TRANSFER SURVEY

Skill Transfer Survey – Instructions to Supervisors

The attached surveys ask you to respond to statements about your employee's use of the skills they learned in the Student Recreation Center Orientation Training. Please complete one survey for each employee you supervise.

Before starting each survey, think about the typical work behavior you have seen in your observations of the employee.

Thank you for your time in completing these surveys. When you are finished, please put them in the manila envelope, seal it, and return it to the Director.

Skill Transfer Survey
Supervisor Version - Summarized

Name of Employee: _____

Unit: _____

Using the following scale, mark one response for each statement:

5 – Almost always
4 - Usually
3 – Sometimes
2 – Seldom
1 – Almost Never

Items from General Training
This employee. . .

1. wears the SRC uniform appropriately; staff shirt tucked in, closed-toed tennis shoes, appropriate pants/shorts.	1 2 3 4 5
2. smiles, makes eye contact and acknowledges SRC customers within their area	1 2 3 4 5
3. uses the 4 steps of good customer service when dealing with customers	1 2 3 4 5
4. uses appropriate radio etiquette by stating their location, the location of the person they are calling and completing the call by stating "over".	1 2 3 4 5
5. completes the Hours Report Form when reporting to work late.	1 2 3 4 5

Unit Specific - Front Counter

6. answers the phone by saying, "Student Recreation Center, this is "name", may I help you?"	1 2 3 4 5
7. allows only those individuals with SRC I.D. or Leisure Line I.D. to enter the facility.	1 2 3 4 5
8. checks the shoes of customers when equipment is checked out.	1 2 3 4 5
9. uses appropriate procedures when operating cash register.	1 2 3 4 5
10. enforces the SRC admission policies in a firm and friendly manner when customers question regulations	1 2 3 4 5

Unit Specific - Weight Room

6. enforces the towel rule.	1 2 3 4 5
7. enforces the backpack policy.	1 2 3 4 5
8. can explain CPR procedure.	1 2 3 4 5
9. can explain spotting techniques.	1 2 3 4 5
10. cleans equipment appropriately and in a timely manner.	1 2 3 4 5

Unit Specific - Maintenance

6. maintains his/her tools in working order.	1 2 3 4 5
7. completes all phases of tasks and takes no short cuts.	1 2 3 4 5
8. places burned out fluorescent tubes in the barrel provided by EH&S.	1 2 3 4 5
9. cleans up all tools before leaving work.	1 2 3 4 5
10. checks out a radio when checking in for work.	1 2 3 4 5

Unit Specific - Building Stewards

6. wears appropriate attire dependent upon the event.	1 2 3 4 5
7. sets up bleachers and mats according to procedures.	1 2 3 4 5
8. completes headcounts on time.	1 2 3 4 5
9. mops tarps and sweeps the gym floor after events.	1 2 3 4 5
10. monitors proper attire.	1 2 3 4 5

Unit Specific – Intramural – Head Officials

6. provides appropriate training information to subordinate officials.	1 2 3 4 5
7. routinely and efficiently completes official's evalutions.	1 2 3 4 5
8. enforces the attire policy.	1 2 3 4 5
9. follows appropriate procedures for dealing with disgruntled participants.	1 2 3 4 5
10. provides as much motivation as training to subordinate officials.	1 2 3 4 5

Unit Specific – Intramural – Office Managers

6. provide appropriate information to interested customers.	1 2 3 4 5
7. finish daily tasks efficiently and completely.	1 2 3 4 5
8. maintain office cleanliness.	1 2 3 4 5
9. receive all paperwork from teams and participants before allowing participation.	1 2 3 4 5
10. follow appropriate procedures for dealing with disgruntled customers.	1 2 3 4 5

Unit Specific – Intramural – Site Staff

6. check all participant ID's before allowing him/her to participate.	1 2 3 4 5
7. enforce participant attire policy.	1 2 3 4 5
8. complete score sheets properly per sport.	1 2 3 4 5
9. complete all required paperwork.	1 2 3 4 5
10. accomplish tasks without delaying event starting times.	1 2 3 4 5

Unit Specific - Excursions

6. hands out itinerary and checklist when customer signs up for trip.	1 2 3 4 5
7. can explain the use of all outdoor equipment and fit it to the customer.	1 2 3 4 5
8. follows appropriate procedures when processing phone reservations, refunds, and credits.	1 2 3 4 5
9. allows only individuals with UCR ID or Leisure Line ID to enter the Outdoor complex.	1 2 3 4 5
10. answers the phone by saying "Outdoor Excursions, this is ___, can I help you?"	1 2 3 4 5

APPENDIX G

PARTICIPANT INSTRUCTIONS FOR

SKILL TRANSFER MEASURE

Transfer Behavior Survey – Instructions to Participants

The attached survey asks you to respond to statements about your use of the skills you learned in the Student Recreation Center Orientation Training. The information you provide will be used to determine the effectiveness of the training program.

Before starting the survey, think about your typical work behavior, then respond to each statement using the scale provided. Your supervisor will also be surveyed as to your use of the skills you learned in training. Your supervisor will use this survey also.

NOTE: Please be sure to include your name on the survey. The information you provide will be seen *only* by the researcher and *only after your name has been removed* and replaced with a numerical code. The confidentiality of your answers will be maintained.

Thank you for your time in completing this survey. When you are finished, please put the survey in the envelope and place it in the box provided.

APPENDIX H

WORK ENVIRONMENT SURVEY

Work Environment Survey – Instructions to Participants

The attached survey asks you to respond to statements about the behavior of the people in your work environment. Before starting the survey, think about your interactions with your peers and supervisor, (your supervisor's name has been filled in on the form), then respond to each statement using the scale provided.

NOTE: Please be sure to include your name on the survey. The information you provide will be seen *only* by the researcher and *only after your name has been removed* and replaced with a numerical code. The confidentiality of your answers will be maintained.

Thank you for your time in completing this survey. When you are finished, please put the survey in the envelope and place it in the box provided.

Name: _____

Unit: _____

Using the following scale, mark one response for each statement:

5 – Almost always
4 - Usually
3 – Sometimes
2 – Seldom
1 – Almost Never

1. My supervisor helps me when I ask him/her for advice about how to use the skills taught in training.	1 2 3 4 5
2. My peers give me extra time to complete tasks that require skills taught in training.	1 2 3 4 5
3. My supervisor is willing to adjust my workload if I need extra time to complete tasks that require skills taught in training	1 2 3 4 5
4. My peers encourage my efforts to incorporate new procedures that I have learned in training.	1 2 3 4 5
5. During my shift, I spend my work time with my supervisor.	1 2 3 4 5
6. My peers offer me opportunities to use new skills I learned in training.	1 2 3 4 5
7. My supervisor is tolerant of changes that I initiate as a result of learning new training skills.	1 2 3 4 5
8. My peers reward me for using new skills taught in training.	1 2 3 4 5
9. My supervisor insures that the physical working conditions of the Student Recreation Center create a productive and positive work environment.	1 2 3 4 5
10. During my shift, I spend my work time with my peers.	1 2 3 4 5
11. My supervisor is tolerant of mistakes I make as a result of using new skills learned in training.	1 2 3 4 5
12. My peers attend training and try to use new skills in their jobs.	1 2 3 4 5
13. My supervisor offers me opportunities to use new skills I learned in training.	1 2 3 4 5
14. My peers offer advice on how to deal with barriers I may face in using my new skills.	1 2 3 4 5
15. I talk with my supervisor about my job.	1 2 3 4 5
16. My peers believe in the importance of training.	1 2 3 4 5
17. My supervisor gives me constructive feedback when I try out new skills or behaviors learned in training.	1 2 3 4 5
18. My peers share tools and materials I need to use the skills learned in training.	1 2 3 4 5
19. My supervisor offers advice on how to deal with barriers I may face in using my new skills.	1 2 3 4 5

20. My peers observe me completing my work assignments.	1 2 3 4 5
21. My supervisor encourages my efforts to use new procedures that I have learned in training.	1 2 3 4 5
22. My peers help me when I ask them for advice about how to use the skills taught in training.	1 2 3 4 5
23. My supervisor provides me with the tools and materials I need to use the skills learned in training.	1 2 3 4 5
24. My peers can provide me with information about procedures learned in training.	1 2 3 4 5
25. My supervisor observes me completing my work assignments.	1 2 3 4 5
26. My peers are tolerant of mistakes I make as a result of using new training skills.	1 2 3 4 5
27. My supervisor rewards me for using new skills on the job that I learned in training.	1 2 3 4 5
28. My peers seem to care whether I use skills taught in training.	1 2 3 4 5
29. My supervisor staffs my shift with sufficient personnel to complete the assigned work.	1 2 3 4 5
30. My peers can tell me where to find answers to my questions if they don't know.	1 2 3 4 5
31. My supervisor can provide me with information about procedures I learned in training.	1 2 3 4 5
32. I talk with my peers about my job.	1 2 3 4 5
33. My supervisor seems to care whether I use skills taught in training.	1 2 3 4 5
34. My peers complete their own work assignments.	1 2 3 4 5
35. My supervisor actively practices those skills taught in the Student Recreation Center's training course.	1 2 3 4 5
36. My peers show respect for the Student Recreation Center facilities.	1 2 3 4 5
37. My supervisor believes that training is important.	1 2 3 4 5
38. My peers already use the skills taught in the training I attended.	1 2 3 4 5
39. My supervisor knows where to find information about my questions if he/she doesn't know the answer.	1 2 3 4 5
40. Our group is united in trying to reach its goals for performance.	1 2 3 4 5
41. We all take responsibility for poor performance by our group.	1 2 3 4 5
42. If members have problems during group activities, everyone wants to help them so we can work together again.	1 2 3 4 5
43. My group does what is necessary to complete a difficult task or assignment successfully.	1 2 3 4 5
44. My group emphasizes accomplishing specific group tasks.	1 2 3 4 5
45. Work is often given to me with unreasonably quick deadlines.	1 2 3 4 5

46. My supervisor provides me with enough time to complete the tasks I am required to do.	1 2 3 4 5
47. I have adequate time to do my job	1 2 3 4 5
48. Current information is often difficult to get at the time I need it to do my job.	1 2 3 4 5
49. I frequently find myself without the proper instructions or necessary direction I need to do my job.	1 2 3 4 5
50. Supervisors in this organization take the time to let employees know when they are doing a good job.	1 2 3 4 5
51. Information about how well I do my job is readily available.	1 2 3 4 5
52. I receive informational feedback about my performance.	1 2 3 4 5
53. This organization provides adequate training for its employees.	1 2 3 4 5
54. This organization has many training opportunities for its employees	1 2 3 4 5
55. I can count on my team members to pull their weight whenever we are working on a team project	1 2 3 4 5
56. My team pulls together.	1 2 3 4 5
57. I have confidence in my coworkers' abilities.	1 2 3 4 5
58. Managers are accessible when problems arise.	1 2 3 4 5
59. My supervisor has an open-door policy and sticks to it.	1 2 3 4 5
60. If employees need to report a problem, management is there to listen.	1 2 3 4 5

APPENDIX I

DESCRIPTION OF SCALES USED IN THE WORK ENVIRONMENT SURVEY

Description of Scales Used in the Work Environment Survey

Scale	Number of Items	Sample Item
Cohesion	5	We all take responsibility for poor performance by our group.
General Means Efficacy	16	I have adequate time to do my job.
Frequency of Contact with supervisor	3	I talk with my supervisor about my job.
Frequency of Contact with peer	3	During my work shift, I spend my time with my peers.
Peer Opportunity to Use	8	My peers offer me opportunities to use new skills I learned in training.
Peer Support	8	My peers seem to care whether I use skills taught in training.
Supervisor Opportunity to Use	8	My supervisor provides me with the tools and materials I need to use the skills learned in training.
Supervisor Support	9	My supervisor gives me constructive feedback when I try out new skills or behaviors learned in training.

APPENDIX J

DEMOGRAPHIC SURVEY

Background Information

Please provide the following information so your responses can be matched across surveys. Your responses will be kept in complete confidence and no individual responses will be released.

1. Name _____ Date _____

2. Work Unit _____

3. Job Title _____

4. Supervisor _____

5. _____ Female _____ Male

6. Have you worked at the Student Recreation Center previously? ___ Yes ___ No
   If yes, please complete the following: Start date _____ End date _____

7. Work Shift: ____ Mornings

   _____ Afternoons

   _____ Evenings

   _____ Weekends

8. How many hours per week do you work? _____

APPENDIX K

DESCRIPTIVE STATISTICS AND RELIABILITIES FOR VARIABLES

Descriptive Statistics and Reliabilities for Variables

Scale	M	SD	Alpha
Supervisor Support	4.51	.522	.892
Supervisor Opportunity to Use	4.57	.487	.847
Peer Support	4.11	.654	.869
Peer Opportunity to Use	4.32	.594	.841
Frequency of Contact-Supervisor	3.54	.860	.665
Frequency of Contact-Peer	4.04	.734	.618
Learning Score	10.80	5.19	--
Cohesion	4.35	.688	.856
General Means Efficacy	4.12	.516	.808
Supervisor 1 Rating	4.57	.390	.832
Supervisor 2 Rating	4.46	.431	.873
Employee Self-Rating	4.49	.398	.627

APPENDIX L

INTERCORRELATIONS MATRIX FOR VARIABLES

Intercorrelations Matrix for Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12
Supervisor Support (1)	1.000											
Supervisor Opportunity to Use (2)	.851*	1.000										
Peer Support (3)	.738*	.648*	1.000									
Peer Opportunity to Use (4)	.714*	.691*	.842*	1.000								
Frequency of Contact-Supervisor (5)	.431*	.311*	.430*	.248†	1.000							
Frequency of Contact-Peer (6)	.486*	.432*	.619*	.583*	.364*	1.000						
Learning Score (7)	.228	.273†	.193	.139	.218	.067	1.000					
Cohesion (8)	.592*	.544*	.563*	.688*	.185	.333*	.200	1.000				
General Means Efficacy (9)	.607*	.597*	.602*	.643*	.189	.318*	.250*	.684*	1.000			
Supervisor 1 Rating (10)	.328*	.405*	.231†	.200	.085	.094	.419†	.278†	.294*	1.000		
Supervisor 2 Rating (11)	.212	.253†	.117	.109	.248†	.046	.129	.170	.011	.366*	1.000	
Employee Self-Rating (12)	.525*	.439*	.375*	.350*	.391*	.378*	.082	.320*	.267†	.162	.222	1.000

† $p < .05$ * $p < .01$

APPENDIX M

HIERARCHICAL REGRESSION OF LEARNING AND SUPERVISOR SUPPORT VARIABLES ON TRANSFER OF TRAINING

Hierarchical Regression of Learning and Supervisor Support Variables on Transfer of Training (N=66)

Variable	R	R^2 change	B
First Block			
Learning Score	.419	.175**	.027**
Second Block			
Supervisor Support	.505	.080*	.210*

* $p < .05$ **$p < .01$

APPENDIX N

HIERARCHICAL REGRESSION OF LEARNING AND SUPERVISOR OPPORTUNITY TO USE VARIABLES ON TRANSFER OF TRAINING

Hierarchical Regression of Learning and Supervisor Opportunity To Use Variables on Transfer of Training (N=66)

Variable	R	R^2 change	B
First Block			
Learning Score	.419	.175**	.024**
Second Block			
Supervisor Opportunity Use	.565	.143**	.320**

* $p < .05$ **$p < .01$

APPENDIX O

HIERARCHICAL REGRESSION OF LEARNING AND PEER SUPPORT VARIABLES ON TRANSFER OF TRAINING

Hierarchical Regression of Learning and Peer Support Variables on Transfer of Training (N=66)

Variable	R	R^2 change	B
First Block			
Learning Score	.419	.175**	.029**
Second Block			
Peer Support	.474	.049*	.139*

* $p < .05$ **$p < .01$

APPENDIX P

HIERARCHICAL REGRESSION OF LEARNING AND PEER OPPORTUNITY TO USE VARIABLES ON TRANSFER OF TRAINING

Hierarchical Regression of Learning and Peer Opportunity to Use Variables on Transfer of Training (N=66)

Variable	R	R^2 change	B
First Block			
Learning Score	.419	.175**	.030**
Second Block			
Peer Opportunity to Use	.466	.042	.138

* p < .05 **p < .01

APPENDIX Q

HIERARCHICAL REGRESSION OF FREQUENCY OF CONTACT AND SUPPORT VARIABLES ON TRANSFER OF TRAINING

Hierarchical Regression of Frequency of Contact and Support Variables on Transfer of Training (N=76)

Variable	R	R^2 change	B
First Block			
Frequency of Contact Supervisor	.106	.011	.025
Frequency of Contact Peer			.038
Second Block			
Supervisor Support	.438	.181**	-.104
Supervisor Opportunity to Use			.456**
Peer Support			.116
Peer Opportunity to Use			-.203

* $p < .05$ **$p < .01$

APPENDIX R

COMPARISON OF LEARNING AND SUPPORT EFFECT SIZES FOR SELF-ASSESSMENT AND SUPERVISOR RATINGS

Comparison of Learning and Support Effect Sizes for Self-Assessment and Supervisor Ratings

Variable	Supervisor Rating as DV R^2 change	Self-Assessment as DV R^2 change
Learning	.175**	.007
Supervisor Support	.080*	.232**
Supervisor Opportunity to Use	.143**	.177**
Peer Support	.049	.106**
Peer Opportunity to Use	.042	.105**

* $p < .05$ **$p < .01$

APPENDIX S

CORRELATION TABLE FOR SUPPORT VARIABLES AND REHIRE STATUS

Correlation Table for Support Variables and Rehire Status

Variable	Rehire Status – No (New Employees)	Rehire Status - Yes
Supervisor Support	.510**	.353*
Supervisor Opportunity to Use	.682**	.449*
Peer Support	.343	.201
Peer Opportunity to Use	.391*	.184

* $p < .05$ **$p < .01$

APPENDIX T

HIERARCHICAL REGRESSION OF LEARNING, GENERAL MEANS EFFICACY, AND SUPERVISOR VARIABLES ON TRANSFER OF TRAINING

Hierarchical Regression of Learning, General Means Efficacy, and Supervisor Variables on Transfer of Training (N=76)

Variable	R	R^2 change	B
First Block			
Learning Score	.419	.175**	.032**
Second Block			
General Means Efficacy	.520	.095*	.239**
Third Block			
Supervisor Support	.584	.070*	-.162
Supervisor Opportunity to Use			.399*

*p < .05 **p < .01

APPENDIX U

REGRESSION OF SUPPORT VARIABLES AND GENERAL MEANS EFFICACY ON TRANSFER OF TRAINING

Regression of Support Variables and General Means Efficacy on Transfer of Training (N=76)

Variables	R	R^2 change	B
Supervisor Support	.439	.193**	-.057
Supervisor Opportunity to Use			.416*
Peer Support			.060
Peer Opportunity to Use			-.186
General Means Efficacy			.112

* $p < .05$ **$p < .01$

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