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ABSTRACT

The first of three papers from this symposium, "The Effects of Personality, Affectivity, and Work Commitment on Motivation to Improve Work through Learning" (Sharon S. Naquin, Elwood F. Holton III), examined the degree to which the Five-Factor Model (FFM) of personality, affectivity, and work commitment dimensions influenced motivation to improve work through learning. Findings indicated that 57 percent of the variance in motivation to improve work through learning was explained by positive affectivity, work commitment, and extroversion. The second paper investigated "The Relationship between Work Environment and Employees' Self-Directed Learning Readiness [SDLR] in Korean Companies" (Ji-Hye Park). The study found that employees showed significantly different perception of all environment factors, SDLR, and teamwork and that taking risks explained their SDLR. The final study reported in the symposium, "Predicting Motivation to Learn and Motivation to Transfer in a Service Organization" (Constantine Kontoghiorghes), attempted to identify key predictors of motivation to learn and motivation to transfer, as well as examined the relationship between the two variables. Organizational commitment, task cues, and co-worker commitment to quality work were found to be the strongest predictors of motivation to learn. Motivation to learn, motivating job, and being expected to use the newly learned skills and knowledge were found to be the most important predictors of motivation to transfer. (Contains 109 total references.) (KC)

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Motivation for Improving Performance

Symposium 43

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The Effects of Personality, Affectivity, and Work Commitment on Motivation to Improve Work Through Learning

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This study examined the degree to which the Five Factor Model of personality, affectivity, and work commitment dimensions influenced motivation to improve work through learning. Data was obtained from private sector employees who were in-house training program participants. Findings indicated that these dispositional effects were significant antecedents of motivation to improve work through learning. Fifty-seven percent of the variance in motivation to improve work through learning was explained by positive affectivity, work commitment, and extraversion.

Keywords: Motivation, Individual Differences, Structural Equation Modeling

Individual differences such as cognitive ability, personality, orientation (values, interests, etc.), and affective disposition (i.e., mood, affect, etc.) have spawned a stream of research known as the dispositional approach. Dispositional factors influence both organizational behavior and organizational performance outcomes (Murphy, 1996). Research suggests that there are dispositional underpinnings of work values, attitudes and moods (George, 1989), indicating that job attitudes and behavior have a stable component (Staw & Ross, 1985). However, very little has been done to study dispositional traits in the context of organizational human resource development. A better understanding of these differences and their impact on workplace learning would enable learning professionals to more effectively tailor application of adult learning principles and improve performance through learning.

The purpose of this study was to develop and test a model of dispositional effects on motivation. The research model incorporated personality (Five Factor Model), affectivity (positive and negative) and work commitment as independent constructs, and motivation to improve work through learning as the dependent construct. Structural equation modeling was used to analyze the research model.

Background of the Study

Motivation To Improve Work Through Learning. Previous research efforts have focused on two types of motivation: motivation to learn or train, and motivation to transfer learning. If the primary desired outcome of organizational training programs is improvement in work outcomes, then using motivation to learn or train as the dependent variable may be too limited for organizational learning environments. The process of improving work through learning also involves willingness to transfer any knowledge acquired through such training programs to improve work processes. It is the combined motivational influences that will influence desired training outcomes.

Thus, this study utilizes an entirely new dependent construct – Motivation to Improve Work through Learning (MTIWL) (Baldwin, Ford & Naquin, 2000; Naquin & Holton, 2000). This construct posits that an individual's motivation to improve work through learning is a function of motivation to train and motivation to transfer [Motivation to Improve Work Through Learning (MTIWL) = f(Motivation to Train, Motivation to Transfer)]. Further, it should more completely capture the motivational influences leading to improved work outcomes from training.

Personality: The Five-Factor Model. The Five-Factor Model (FFM) suggests that there are five broad categories of traits at the top of the personality trait hierarchy: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness (Costa & McCrae, 1992). Research using this taxonomy (cf., Barrick & Mount, 1991; Hogan, 1991) indicates a consistent relationship between personality and job performance.

Less is known about the relationship between personality variables and training proficiency. Colquitt and Simmering (1998) found that personality variables explained an incremental 28% of the variance in prefeedback motivation to learn and 27% of the variance in post-feedback motivation to learn with both conscientiousness and learning orientation having significant independent relationships. Barrick and Mount's (1991) meta-analysis found that personality validly predicted training proficiency across all occupational groups studied ($r = .07 - .26$). Salgado (1997) found that agreeableness and openness were predictors for training criterion ($r = .31$ and $r = .26$,

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respectively). Barrick and Mount (1995) also found consistent correlations between conscientiousness and educational achievement, and asserted that conscientiousness is the most consistent predictor of academic achievement and job performance. Individuals rating high in conscientiousness are more likely to have positive attitudes toward learning (Barrick & Mount, 1991).

Affect: Positive and Negative Affectivity. Affectivity is an emotion-based trait dimension (Watson & Clark & Tellegen, 1988) creating a cognitive bias through which individuals approach and understand their life experiences and may affect how people experience and evaluate their jobs (Levin & Stokes, 1989). A prominent perspective of affectivity is that there are two independent dimensions: positive (PA) and negative affectivity (NA) (Costa & McRae, 1980; Diener & Emmons, 1984). PA is the tendency to experience positive emotional states and NA is the tendency to experience aversive ones (Judge, Locke, & Durham, 1997; Watson & Clark, 1984).

Individuals with higher levels of NA tend to have higher levels of nervousness and anxiety, focus more on negative aspects of themselves and the world, and dwell on their mistakes, disappointments and shortcomings (Levin & Stokes, 1989). Individuals with high levels of PA demonstrate enthusiasm and are energetic, joyous, eager, sociable, zestful, and exhilarated. According to George and Brief (1992) and Tellegen (1985), these individuals also actively seek both interpersonal relations and achievement. PA has also been found to influence an individual's responsiveness to incentives (Gouaux & Gouaux, 1971), and to enhance learning speed (Masters, Barden, & Ford, 1979).

Much of this research assumes that there is a direct causal relationship between personality traits and affectivity (Fry & Heubeck, 1998). Specifically, that neuroticism measures tend to be more strongly associated with NA and extraversion measures tend to be more strongly associated with PA (Clark & Watson, 1988; Costa & McRae, 1980; Emmons & Diener, 1985; McFatter, 1994; Meyer & Shack, 1989). An alternate theory of the relationship between personality and affectivity was proposed by Tellegen (1985) and supported by Watson and Clark (1997). Rather than hypothesizing a causal relationship, Tellegen hypothesized that they are independent and are both facets of a higher order construct, positive emotionality.

The Role of Work Commitment. The suggestion that commitment plays a key role in training motivation is not new. Facteau, Dobbins, Russell, Ladd, & Kudisch (1995) found that individuals who were committed to the values and goals of the organization had higher levels of pretraining motivation. Tannenbaum, Mathieu, Salas, & Canon-Bowers (1991) argued that "employees' organizational commitment levels are likely to predispose them to view training as more or less useful, both to themselves and to the organization" (1991, p. 760).

What is not as clear is what forms of commitment are most relevant. Morrow (1983) hypothesized that the concept consists of four distinct facets: work ethic, career commitment, organizational commitment (affective and continuance), and job involvement (Morrow, 1993). Because work commitment is likely to influence motivation in the workplace, her conceptualization of work commitment foci provided a starting point for this analysis. Based on research discussed below, work commitment is hypothesized to mediate the relationship between some of the predictor variables and motivation to improve work through learning. Three constructs of Morrow's (1993) conceptualization, work ethic, organizational commitment, and job involvement, were utilized.

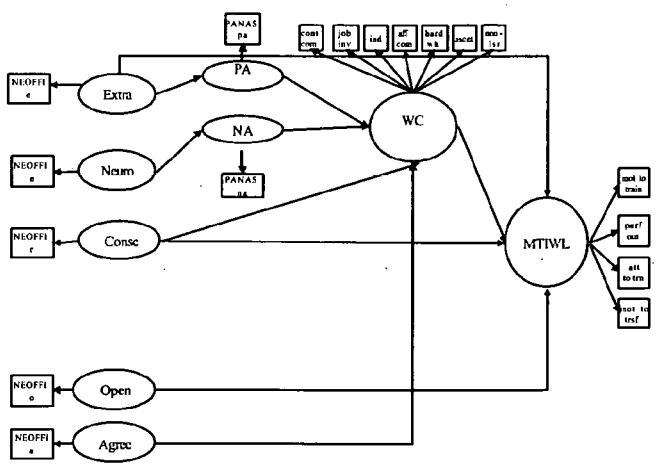
Work Ethic. The concept of work ethic has been defined for "an individual (or for a more or less homogeneous group of individuals) as a value or belief (or a set of values or beliefs) concerning the place of work in one's life. . ." (Siegel, 1983, p. 28). Merrens and Garrett (1975) found that individuals with high work ethic scores performed better and longer on tasks designed to provide low motivation and interest levels. Work ethic has also been related to achievement (Furnham 1990a, 1990b), organizational commitment (Putti, Aryee, & Liang, 1989), and job involvement (Brief & Aldag, 1977; Mayer & Schoorman, 1998).

Organizational Commitment. Morrow's 1983 work addressed the antecedents of organizational commitment and related the construct to dispositional factors and other individual differences. Morrow contended that organizational commitment "is a function of personal characteristics including individual need for achievement, which is considered a dispositional quality" (Morrow, 1983).

Job involvement. Lodahl and Kejner (1965) defined job involvement as the degree of daily absorption a worker experiences in work activity. Job involvement leads individuals to exceed the normal expectations of his or her job (Moorhead & Griffin, 1995) and is believed to be a key component in employee motivation (Lawler, 1986). Motivation for employees with lower levels of job involvement may be more extrinsic and they may have low interest in performance improvement. In contrast, the motivational factors for employees with high levels of job involvement may be more intrinsic and they may be quite interested in performance improvement. Job involvement has been found to be related to motivation and training effectiveness (Brown; 1996; Clark, 1990; Hensey, 1987).
Based on the research discussed, the research model shown in Figure 1 was developed. This figure shows the latent variables, indicator variables (discussed in the next section) and hypothesized structural relationships. It is important to note that this model does not capture all influences on motivation to improve work through learning, as

only dispositional and not situational effects are excluded.

Figure 1. Dispositional Model of MTIWL With All Indicator Variables



Method

Sample. Data for this study was obtained from a nonrandom sample of 247 subjects from a single private sector health insurance organization. Listwise deletion for missing data resulted in a usable sample size of 239. Respondents were participants in a variety of in-house training programs, represented a wide range of years of work experience, and included a wide range of job levels from clerical employees to mid- and upper-level managers. The average age of the respondents was 35.5 years (range 19 - 68, SD = 10.516); 28.4% or 68 of the respondents were male and 71.6% or 171 were female.

Procedure. Surveys were administered to respondents at the beginning of in-house training programs. All participants were required to attend these classes as part of their job responsibilities. Questionnaires were presented to participants as part of the training program. Instructors were told to allow participants to withdraw if they had objections to the study, but none objected.

Instrumentation. To measure motivation to improve work through learning, scales measuring both an individual's motivation to train and motivation to transfer were necessary. Because it is desirable to have at least three indicators for latent constructs, four scales were selected to measure the motivation to improve work through learning construct. The START instrument serves multiple purposes (Wienstein et al., 1994) and is comprised of eight 7-item scales. Two scales were selected: training attitudes and the motivation to train scale. In this study, coefficient alpha reliabilities were .70 for both scales. The LTSI (Holton et al., 2000), a 68-item instrument, measures factors affecting learning transfer including motivation. The motivation to transfer scale (α = .83) and performance outcomes expectations (α = .83) scale were selected. Drawing on expectancy theory, the second scale was selected to include an outcome component of improving work through motivation. In this study, coefficient alpha reliabilities were .85 for motivation to transfer and .78 for performance outcome expectations.

The NEO Five-Factor Inventory (NEO-FFI), a 60-item measure of personality developed by Costa and McCrae (1992), was used to measure personality dimensions. In this analysis, NEO-FFI raw scores were converted to t-score values using gender-based national norms determined by Costa and McCrae (1991). Internal reliabilities for the NEO-FFI have been reported as .86, .77, .73, .68, and .81 for neuroticism, extraversion, openness, agreeableness, and conscientiousness, respectively (Costa & McCrae, 1991).

The most widely used measure of PA and NA is the Positive and Negative Affectivity Schedule (PANAS) (Watson, Clark, & Tellegen, 1988). Subjects are instructed to rate PA and NA according to their "general" or "average" feelings to assess trait affectivity instead of state affectivity. Watson et al. (1988) reported internal consistency reliabilities for PA as .87 and for NA as .88.

Blau and Ryan (1997) conducted exploratory factor analyses to identify dimensions of the work ethic construct and revealed a four-dimension construct: hard work, nonleisure, asceticism, and independence measured by an 18-item

secular work ethic instrument. Because it appeared to contain the most valid items empirically derived from seven different instruments, it was selected for use in this study. In this study, coefficient alpha reliabilities were: hardwork (.78), nonleisure (.85), asceticism (.80), independence (.73).

Kanungo (1982) proposed a job involvement measure consisting of 10 items that he felt were more representative of the psychological conceptualization of job involvement (Blau, 1985b). Items included in the Kanungo instrument were derived from Lodahl and Kejner (1965) but it is psychometrically stronger than the other scales (Blau, 1997) so it was selected for this study. Coefficient alpha reliability was .71.

Because of its multidimensional structure, the Allen and Meyer (1990) instrument is increasingly being used to measure organizational commitment. This instrument consists of three eight-item scales: affective, continuance, and normative commitment. In this study, coefficient alpha reliabilities were .84 for affective commitment and .81 for continuance commitment.

Analysis. A structural equation modeling analysis was conducted with LISREL 8.3 (Joreskog & Sorbom, 1996) to test the causal relationships between variables in the hypothesized model. Input for estimation of the model was provided by a covariance matrix prepared with PRELIS 2.3. Data analysis was conducted in two stages in accordance with a procedure suggested by Anderson and Gerbing (1988) and Hair, Anderson, Tatham, and Black (1998). In the first stage, the adequacy of the measurement model was examined. The initial analyses evaluated the loading of individual items on instrument scales. Scale scores were then calculated and used as indicators for the latent constructs. A second analysis was conducted to evaluate the fit of the measurement model comprised of the scale scores and latent constructs.

Because the NEO and PANAS scales are so well established in the literature, these scales were not included in this stage of analysis. Each of these scales was treated as a single indicator for a corresponding latent construct. As is common practice with single indicators, the error variance was set to 1 minus the reliability of the scale times the variance of the scale (Hair et al., 1998). For the NEO-FFI, the variance and reliability were obtained from the technical manual (Costa & McRae, 1992) while the values used for the PANAS were calculated from this sample.

The second step of the analysis required assessment of the structural model describing the relationships among the latent constructs (Anderson & Gerbing, 1988). Just like the evaluation process for the measurement model, structural model assessment involves examination of multiple fit indices. In addition, parameter estimates for each path and their statistical significance were examined as part of this stage.

It is increasingly common for researchers to develop and evaluate alternative models rather than simply examining the absolute fit of the hypothesized model. Thus, at each step of the analysis the model was carefully examined for possible modifications as well as overall fit. Each change suggested by weak factor loadings, non-significant paths, or modification indices was carefully evaluated for alternative theoretical support.

Results

Measurement Model Analysis. The first stage of the measurement model analysis was to examine the loadings of instrument items on each scale except for the NEO-FFI and the PANAS. For space reasons this step will not be discussed in detail but full details are available from the authors. Briefly, confirmatory factor analyses of scales led to deletion of only a few instrument items. Resulting fit measures were considered adequate. Scale scores were then calculated using the slightly revised scales.

The second stage was to test the loading of the scales on the designated latent constructs. In this model, there were two constructs with multiple indicators: work commitment and motivation to improve work through learning. The initial fit for the model (see Figure 1) was not as strong as desired ($\chi^2_{(106)}$ = 330.22, GFI = .87; AGFI = .78; NFI = .76; RMSEA = .094; SRMR = .078; CFI = .82). Two scales had low loadings on work commitment (independence = .32 and continuance commitment = -.31). Both scales were eliminated, which improved the fit somewhat ($\chi^2_{(75)}$ = 226.42, GFI = .89; AGFI = .81; NFI = .82; RMSEA = .092; SRMR = .069; CFI = .86).

In an effort to improve the fit even further, it was decided to evaluate the results of eliminating additional indicators. Two remaining indicators were candidates: non-leisure and asceticism. Asceticism was eliminated first because it was the lowest loading followed by non-leisure. The best fit came from elimination of both these scales ($\chi^2_{(48)}$ = 125.90, GFI = .93; AGFI = .85; NFI = .88; RMSEA = .083; SRMR = .054; CFI = .92) and all loadings were above .50.

Thus, in the final measurement model four indicator variables were retained for the dependent construct motivation to improve work through learning and three were retained for work commitment. Only the hard work sub-scale was retained from the work ethic instrument. Work commitment thus had three indicators: affective commitment, job involvement, and hard work.

Structural Model Analysis. The fit for the initial structural model (see Figure 1) was not as strong as desired ($\chi^2_{(63)}$ = 205.78, GFI = .89; AGFI = .82; NFI = .80; RMSEA = .098; SRMR = .079; CFI = .85). Several paths were also non-significant (+ < 1.96) including: from openness to motivation to improve work through learning (t = -.39); from agreeableness to motivation to improve work through learning (t = -.57); from agreeableness to work commitment attitudes (t = 1.33); and, NA to work commitment attitudes (t = 1.11). In addition, a negative error variance was detected. Thus, modifications to the model were deemed appropriate.

These changes yielded an improved fit, though it was still not as strong as desired ($\chi^2_{(38)}$ 121.43, GFI = .92, AGFI = .85, NFI = .86, RMSEA = .096, SRMR = .067, CFI = .90) and an offending estimate in the form of a negative error variance was still present. The decision was made to eliminate the path from conscientiousness to motivation to improve work through learning because: a) this path was not significant (t-value = -.40) and, b) there was a path from conscientiousness to work commitment attitudes so the conscientiousness construct would not be eliminated from the model.

Dropping the path from conscientiousness to motivation to improve work through learning eliminated the negative error variance and slightly modified the fit ($\chi^2_{(39)}$ 130.79, GFI = .91, AGFI = .85, NFI = .84, RMSEA = .099, SRMR = .074, CFI = .88). However, the fit was still not as strong as desired so theory was examined in an attempt to establish a basis for assessing an alternate model.

Alternate Structural Model. The alternate model examined involved relocating the PA path from an endogenous construct mediating the relationship between extraversion and work commitment to an exogenous construct directly influencing motivation. This was supported both by statistical evidence (largest modification index = 35.37) and theoretical support from alternate theory.

The paths involving extraversion, neuroticism and affectivity hypothesized in the original model were based on the theoretical assertions of Costa and McCrae (1980, 1991). They viewed PA as being directly caused by extraversion and NA caused by neuroticism. However, in this sample the correlation between extraversion and PA was only .47, and only .48 between neuroticism and NA. Furthermore, the correlation between PA and neuroticism (r = .40) and between PA and conscientiousness (r = .46) were of similar magnitude as PA's correlation with extraversion. Thus, while these correlations clearly indicated an association between the constructs, they also suggested that PA might be a separate construct that was associated with, but not caused by extraversion. This is consistent with the theoretical assertions made by Tellegen (1985) and Watson and Clark (1997) discussed earlier.

Thus, the path from extraversion to PA and the path from PA to work commitment were removed, and one path -- from PA to motivation -- was added. Analysis of this model indicated improved fit ($\chi^2_{(37)}$ 82.86, GFI = .94, AGFI = .89, NFI = .89, RMSEA = .072, SRMR = .064, CFI = .94). Comparison of the measures for comparing competing models also indicated that this was the best fitting model, with all values being lowest for this model.

Figure 2 shows the final path model with standardized path coefficients. Parameter estimates indicated that all but one path was statistically significant. T-values ranged from 1.57 to 4.57. While the path from extraversion to motivation to improve work through learning was not statistically significant (t = 1.34), it was retained in the model because of prior research findings indicating its importance (Barrick and Mount, 1991). The remaining five paths were statistically significant (>1.96).

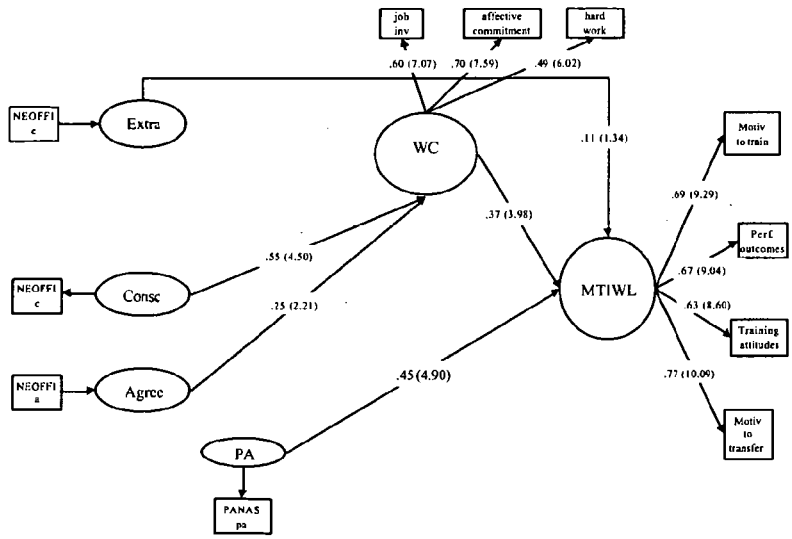
Conscientiousness and agreeableness explained 50% of the variance in work commitment. And, work commitment, extraversion and PA explained 57% of the variance in the dependent construct, motivation to improve work through learning. The standardized coefficients for the total effects on motivation to improve work through learning shows that PA had the strongest influence (β = .45) while conscientiousness had the second strongest influence (β = .20) even though it occurred indirectly through work commitment. Extraversion (β = .11) and agreeableness (β = .09) had smaller effects, with agreeableness also operating through work commitment.

Discussion

Four of the dispositional traits assessed in this study were found to be antecedents of MTIWL – two directly and two indirectly through work commitment. Extraversion and PA directly and positively influenced MTIWL, while the effects of conscientiousness and agreeableness were mediated by work commitment which positively influenced the dependent construct. More specifically, 57% of the variance in MTIWL was explained by PA, work commitment, and extraversion. Fifty percent of the variance in the mediator construct, work commitment, was explained by conscientiousness and agreeableness. This indicates that these dispositional effects are, in fact, important considerations in predicting motivation to improve work through learning.

The significance of the path from PA to MTIWL, the strongest path found in this study, supports previous research (George and Brief, 1992; McFatter, 1994). High PA individuals may be more optimistic about training and

Figure 2. Final Model with Standardized Path Coefficients and t-values



have a stronger belief in their ability to successfully complete training. They may also have more confidence in their ability to improve work situations as a result of the knowledge and skills acquired through training.

Conscientiousness was the second strongest predictor, mediated by work commitment. Findings regarding conscientiousness are consistent with previous research that suggests a relationship between this personality dimension and work commitment. Conscientiousness, according to Costa and McCrae (1991), is comprised of facets such as competence, order, dutifulness, achievement striving, self-discipline, and deliberation. These descriptors are similar to those of the work ethic component of work commitment which include an orientation toward hard work and achievement, dependability, and persistence (Weber, 1958). These findings also support conscientiousness studies that are more closely related to training/learning and motivation (Barrick & Mount, 1991; Colquitt & Simmering, 1998; Digman & Takemoto-Chock, 1981; Mathieu & Martineau, 1997; Smith, 1967; Takemoto, 1979).

The two other predictors had weaker effects. Extraversion was slightly greater than agreeableness but further research is needed to determine if it is, in fact, a significant predictor. Logically, it would seem to be because extraverts, somewhat like individuals with high levels of PA, tend to be optimistic, energetic, enthusiastic, and actively seek both interpersonal relations and achievement (George & Brief, 1992). The weakest predictor in the model was agreeableness. However, the relationship between agreeableness and work commitment found in this study provides new information regarding this personality dimension because no other studies were located that directly tested this relationship.

Somewhat unexpectedly, openness to experience was not a significant predictor of the dependent variable, nor did it significantly influence work commitment. In some ways, this contradicts previous research. For instance, Barrick and Mount (1991) found openness correlated with training proficiency (r = .25). Others (Driskell et al., 1994; Gough, 1987; McCrae, Costa & Piedmont, 1992; Salgado, 1998) have also found a positive relationship between openness to experience and learning. One explanation may lie in the fact that the MTIWL construct included a transfer and performance outcome component, unlike the more frequently assessed motivation to learn construct. Had the dependent variable been more learning oriented (i.e., learning for the sake of learning) as opposed to being outcome oriented (i.e., geared toward the application of the training knowledge and skills attained), openness to experience might have remained in the model.

The finding that neuroticism and NA were not related to MTIWL is somewhat surprising. While there was limited research directly linking these constructs to training, the characteristics of individuals scoring high on these scales would seem to suggest that they would influence motivation.

MTIWL, the dependent construct, is a new construct devised to assess an individual's motivation to train *and* motivation to transfer knowledge or skills acquired through training initiatives to work settings. This is the first

known use of this construct. Confirmatory factor analysis showed that the four scales selected loaded on this latent construct.. The squared multiple correlations for all scales were good (motivation to transfer = .60; motivation to train = .48; performance outcome expectations = .45; attitudes toward training = .40). Each of the separate scales selected had evidence of initial content construct validity from pervious studies.

These findings suggest that each individual has a dispositionally affected motivational profile for improving work through learning based on four factors – PA, conscientiousness, extraversion, and agreeableness. As such, organizations must be prepared to respond to the motivational forces within current and potential employees. Because dispositional tendencies tend to remain stable throughout an individual's working career, knowledge of an employee's dispositional motivation profile may enable employers to make better predictions regarding work behaviors. The large contribution of these dispositional characteristics in predicting motivation to improve work through learning suggests that HRD professionals should more closely attend to the motivational levels of employees who score low on these personality dimensions. Interventions should be developed and implemented to heighten pre-training motivation for these individuals.

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The Relationship between Work Environment and Employees' Self-Directed Learning Readiness in Korean Companies

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To investigate the relationship between work environment and employees' self-directed learning readiness (SDLR) in Korean companies, this study analyzed whether or not employees' perception of their work environment and SDLRS are different according to the company where they belong; examined which of work environment factors are related to SDLR. Consequently, employees showed statistically significantly different perception of all environment factors and SDLR and teamwork and taking risks/ innovation statistically significantly explained their SDLR..

Keywords: Self-Directed Learning, Self-Directed Learning Readiness, Work Environment

Society is rapidly changing and so are the necessary knowledge, skills, and aptitude in order to cope with change. Carnevale, Gainer, and Meltzer (1990) presented the basic skills which employees should have in order to survive in the environment as following: (1) learning how to learn; (2) basic competency skills like reading, writing and computation; (3) communication skills, that is, speaking and listening effectively; (4) adaptability skills to creatively think and solve problems; (5) developmental skills managing personal and professional growth; (6) group effectiveness skills; and (7) influencing skills. Among these skills, he cited, learning how to learn would be the foundation of other skills. Besides learning how to learn, many other terminologies implicate similar meaning, such as self-planned learning, self-directed learning, self-aware learning and self-paced learning. Among them, self-directed learning has been extensively used to describe the form of study to be initiated by learners (Caffarella and O'Donnell, 1987) and self-directed learning readiness has been used to measure to what extent an individual has skills and attitude related to self-directed learning (Guglielmino, 1977).

Having become mature and having accumulated their own experience, adults have been changed into self-directed human beings (Knowles, 1980). As learners, therefore, adults come to participate in learning activities by their own choice and intend to learn self-directedly from their various experiences (Knowles, 1975). Most employees in organization are adults. Therefore, they have and should have the characteristics of a self-directed learner. According to previous research (Guglielmino, Guglielmino, & Long, 1987; Guglielmino & Klatt, 1994), employees' self-directed learning readiness is related to job performance. The higher the degree of self-directed learning readiness, the better job performance and vice versa. Hence, an organization needs employees having higher self-directed learning readiness and should encourage them to improve it.

A person's characteristics are inherent in nature to some extent, but also affected by his/ her own experience and environment surrounding him/ her (Lewin, 1951). Adult learners' self-directed learning readiness is one of the personal characteristics and can be improved or damaged by the environment surrounding an individual (Young, 1986; East, 1986; Yoo, 1997). Work environment is one of the most influential environments around employees and closely related to employees' self-directed learning readiness, furthermore to job performance (Litwin & Taiguri, 1968; Robert, 1986). Identifying which of work environment factors are related to employees' self-directed learning readiness, therefore, is meaningful for a company which aims to improve individuals' job performance and ultimately organizational performance.

Accordingly, this study aims to investigate empirically the relationship between work environment and employees' self-directed learning readiness. For this purpose, this study will analyze whether or not employees' perception of their work environment and self-directed learning readiness are different according to the company to which they belong; examine to which of work environment factors are related to self-directed learning readiness and to what extent the factors explain it.

Theoretical Framework

Self-Directed Learning and Self-Directed Learning Readiness

Self-directed learning has been slightly differently defined by whether it is regarded as a learning process/

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method, as a training program, or as a personal characteristic. Focusing on a learning process, Knowles (1975) defined it as a process that an individual has the initiative for planning learning experience, finding learning resources and evaluating the result. Piskurich (1993) specified self-directed learning as the concept of a training program in which learners can master learning materials at their own pace. The concept regarding it as a personal characteristic is Yoo's (1997). She defined self-directed learning as an adult learner's capability to set up his/ her own learning goal, perform and evaluate it, and find a learning opportunity by himself/ herself. Embracing these diverse concepts, Long (1996) differentiated two concepts of self-directed learning, that is, a comprehensive concept and a narrow concept. The former is to include the concepts of learning process, learning method and learner's characteristic. On the contrary, the latter is to focus on one concept among them. Also, he clarified the meaning of self-directed learning by comparing two concepts of self-directed learning and other-directed learning. That is to say, self-directed learning are relatively independent and intrinsically motivated, values self-initiative, has positive self-efficacy, engages in deep processing and prioritizes mental focus while other-directed learning are relatively dependent, and extrinsically motivate, values following directions, has limited self-efficacy, and engages in surface processing.

However, it should be kept in mind that self-directed learning does not mean isolated learning activities from environment surrounding learners. Self-directed learning means neither an isolated learning in the library, at home, or in the office, nor distant learning. It should be understood that an individual finds his/her own learning need, looks for proper learning resources, manages the learning process and evaluates the results without regard to place or distance (Candy, 1991).

Self-directed learning readiness is the degree that an individual has readiness for self-directed learning and is a measurable concept. Self-directed learning is occurred by a learner having self-directed learning readiness. A learner has relatively higher self-directed learning readiness but another has relatively lower one. Although adults have a different level of self-directed learning readiness, it is not fixed and can be improved by an interaction of an individual and the environment (Yoo, 1997). In other words, the level of self-directed learning readiness is determined by how well the environment encourages and assists their self-directed learning efforts and consequently how self-directed learning readiness can be improved by environmental conditions becomes a crucial topic.

The most frequently used instrument to measure readiness for self-directed learning is Guglielmino (1977)'s Self-Directed Learning Readiness Scale (SDLRS). Field (1989) gave rise to questions about validity, reliability, structure of SDLRS, and Oddi (1986) and Straka, Nenniger, Spevacek, and Wosnitza (1996) created alternative instruments of SDLRS, Oddi Continuing Learning Inventory (OCLI) and Motivated Self-Directed Learning Questionnaire for Schools and Companies (MSDLQ-S-C) respectively. However, the researcher judged that SDLRS, especially the Korean version of SDLRS, is proper for the purpose of this study because OCLI has been criticized in that it is not differentiated from SDLRS and MSDLQ-S-C needs to be validated in more various culture and nations. Furthermore, overall the validity studies on SDLRS showed a positive relationship between SDLRS score and observable indicators of self-directed learning (Guglielmino & Guglielmino, 1991). Accordingly, this study is based on SDLRS.

Employees' Self-Directed Learning Readiness in Companies and Work Environment

The concept of self-directed learning related to a company is gaining attention. Technology utilized in the business is changing day by day, characteristics of people composing a company are varied, and the business is operated in various countries. Adapting to these changes and diversity needs various skills: learning new technology; adapting to people's differences; and dealing deal with customer or stakeholders from other countries. Education to provide these skills and make employees adjust to new environment is indispensable for a survival of companies. While educational needs in a company are growing, however, educational budgets and resources are limited. Accordingly, self-directed learning readiness, the ability that people can learn and solve problems by themselves, is becoming more and more of a concern for companies (Foucher and Tremblay, 1993) and not a few studies to explore the relationship between self-directed learning readiness and organization or performance has been conducted (Piskurich, 1994).

Especially researchers has concerned with identifying factors affecting self-directed learning readiness and work environment has been considered as a major one of those factors. According to Lewin (1951), all human activities are affected by society and the environment and are social products, so is human learning. Therefore, characteristics of the organization and society to which an individual belongs should be considered in order to understand the individual's behavior and work environment is one of the most influential environments around employees. In this vain, it is important to explore the relationship between self-directed learning readiness and work environment.

A few research have been explored the relationship, especially GIRAT (Group for Interdisciplinary Research on Autonomy and Training) explored environmental factors of self-directed learning through experts' in-depth discussion (Baskett, 1993). These factors were confirmed and validated by multi-stage research like workshop, participative study, evaluation and in-depth discussion. As a result, 42 provocative propositions for self-directed learning in organizations were generated and these propositions were further classified into 10 categories: continuous improvement; involving individuals; taking personal responsibility; harmonious values; leadership setting an example; valuing differences; communication; taking risks; teamwork; and innovation. The study demonstrated the importance of the relationship between organizational environment and self-directed learning. Although these factors were determined by in-depth discussion with experts, they were not examined empirically.

As mentioned above, the importance of the relationship between work environment and employees' self-directed learning has been addressed in much research, but empirical studies were only a few. This study, therefore, will investigate the relationship between employees' self-directed learning readiness and work environment, particularly along the ten environmental factors created by GIRAT.

Research Questions

The following three questions have been developed to address the areas stated in the purpose statement and investigate the theoretical framework

1) Is the degree of employees' perception of work environment different according to the company to which they belong?
2) Is the degree of employees' self-directed learning readiness different according to the company to which they belong?
3) Which factors of work environment factors are related to employees' self-directed learning readiness?

Methodology

Population and Sample

The target population of this study is employees in Korean private companies, and the sample is 414 employees who have worked for at least two years in the company to which they belong at that time. The sample was selected by two steps: choosing companies and then selecting employees within each company. Selection of companies was based on the international standard classification of occupations (ILO, 1988). According to the standard, there are ten major occupation groups of legislators, senior officials and managers, professionals, technicians and associate professionals, clerks, service workers and shop and market sales workers, skilled agricultural and fishery workers, craft and related trades workers, plant and machine operators and assemblers, elementary occupations, and armed forces occupations. Except for agricultural and fishery workers, plant and machine operators and assemblers, and armed forces, seven companies representing seven major groups were selected. The three groups were excluded because of the difficulty of sampling. To select employees within a company, proportional stratified sampling[1] considering a position was used. To be more specific, males were 341 (82.4%) and 30 to 34 years were the most (178, 42.9%). In academic career, people graduating university were the most (318, 76.8%) and 285 (68.8%) got married. Job position was the order of Junior managers (197, 47.6%), Employees (118, 28.5%), Middle managers (70, 16.9%), and Senior managers (28, 6.8%). Executives or CEOs were excluded because they were hard to survey and there were only a few existed in each company. The sample was limited to employees who had worked for at least two years, because some working period within one company was presumed to be needed in order to perceive and evaluate work environment.

Table 1. The Number of Subjects in Each Company

	A	B	C	D	E	F	G	Total
Freq (%)	67 (16.2)	44 (10.6)	69 (16.7)	64 (15.5)	59 (14.3)	63 (15.2)	48 (11.6)	414 (100.0)

Instrumentation

The survey questionnaire was made up of four related parts: self-directed learning readiness, work

[1] Proportional stratified sampling means the proportion of each group in the sample is the same as their proportion in the population (Gall, Borg, & Gall, 1996). The reason for using this sampling is to represent the demographic characteristics of the population.

environment, demographic variables and job stability. The last two parts were measured for multiple regression analysis. Gender, age, academic career, marital status, and job position constituted demographic variables and aptitude to his/her company and prospects for his/her job made up of job stability.

(1) Self-Directed Learning Readiness: SDLR-K-96 (Kim & Kim, 1996), the Korean version of Guglielmino's self-directed learning readiness (1977), was used. 18 items were removed from the original SDLRS through repeated factor analysis. Hence, SDLR-K-96 consisted of 39 items and the reliability was cronbach'α = .91.

(2) Work Environment: GIRAT (Group for Interdisciplinary Research on Autonomy and Training) developed 42 propositions divided into ten categories affecting self-directed learning (Baskett, 1993). In this study, these propositions were converted to a four point Likert-type scale. Among 10 categories, two categories were excluded because all propositions in those categories were overlapped with other categories, and two categories having similar concepts were merged. Reviewed by a professor and colleague, 30 items of 6 factors from GIRAT's were selected. The reliability of these items was cronbach'α = .89.

Data Collection and Analysis

Data were collected by the researcher with the assistance of the training department of each company during two weeks. In four companies, the survey was conducted during training sessions and the others sent it to sample with a formal letter issued by the training department. The questionnaires were distributed to 500 employees and 451 out of 500 responded. Excluding responses which included insufficient data, consequently 414 responses were analyzed (the response rate = 82.8%).

The data were analyzed through the following procedures.

First, factor analysis was used to extract work environment factors related to self-directed learning readiness. The factor score was calculated by the regression method because it is used extensively (Lee, 1995) and factors were rotated by the varimax method in order to prevent multicollinearity because the factor scores should be used in multiple regression analysis (Chae, 1992). The five factors of which the eigen value were over 1.0, the factor loading was over .5 and were bound by more than 3 items were obtained through the scree test which is used to identify the optimum numbers of factors (Hair, Anderson, Taitham, & Black, 1995).

Second, analysis of variance was used to identify the difference of the perceived work environment and self-directed learning readiness among companies. The summation of each item score within each factor was used as the value of each work environmental factor.

Third, hierarchical multiple regression analysis was employed to identify to what extent work environment factors affected employees' self-directed learning readiness. Work environment, demographic variables, and job stability were entered in sequence. Dummy coding was used for seven variables, such as gender, academic career, marital status, position, the aptitude to their present job, and prospects for occupation.

Results and findings

Environment Factors

As a result of factor analysis using the varimax rotation method, seven factors were extracted. Repeated factor analysis, excluding items of which factor loading was under .05 and which was not bound by at least three items, extracted five factors. These factors explained 55.9% of the total variance of work environment. The first factor was made of six items and explained 29.1% of the variance of work environment. The eigen value of this factor was 5.81. These items were categorized into "valuing individual differences." The second factor extracted was "teamwork." The eigen value and variance explained by this factor were 1.77 and 8.9% respectively. The third factor was made of 3 items and its eigen value and variance explained were 1.36 and 6.8% respectively. This factor was called "involving individuals." The fourth factor, called "taking risks/innovation", was made of 4 items and its eigen value and variance explained were 1.24 and 6.2%. The last factor consisted of 3 items. Its eigen value was 1.00 and the variance explained by this factor was 5.0%. This factor was called "taking personal responsibility." Because the reliability of this factor was only .19[2], this factor was excluded in the further analysis.

Differences of Work Environment

An analysis of variance revealed differences among employees' perceived degree of all work environment

[2] The reliability of each factor should be above .5 in order to use in the further analysis (Lee, 1995).

factors in seven companies (Table 2). In other words, employees who belong to different company perceived differently the degree that the company values individual differences, the degree that people work well together, the degree that the company encourage challenge and change, and the degree that individuals are encouraged to be involved in organizational decision making. Their differences were statistically significant under a .001 significance level.

Table 2. The Differences of Work Environmental Factor Between Companies

Variables		Sources	df	SS	MS	F
ENVIRONMENT	Valuing Individual Differences	Between	6	669.6223	111.6037	13.5557***
		Within	407	3350.8125	8.2330	
		Total	413	4020.4348		
	Teamwork	Between	6	134.8482	22.4747	5.6222***
		Within	407	1626.9779	3.9975	
		Total	413	1761.8261		
	Involving Individuals	Between	6	79.6179	13.2696	5.4454***
		Within	407	991.7952	2.4368	
		Total	413	1071.4130		
	Taking risks /Innovation	Between	6	243.7958	40.6326	12.3901***
		Within	407	1331.4488	3.2794	
		Total	413	1575.2446		

*** $p < .001$

Differences of Employees' Self-directed Learning Readiness

An analysis of variance revealed differences among employees' self-directed learning readiness in seven companies (Table 3). In other words, it could be said that employees who belonged to companies having different work environments had different self-directed learning readiness. Their differences were statistically significant under a .001 significance level.

Table 3. The Differences of Self-Directed Learning Readiness Between Companies

Sources	df	Sum of Squares	Mean Squares	F
Between	6	15227.1563	2537.8594	5.3575***
Within	407	192797.6480	473.7043	
Total	413	208024.8043		

***$p < .001$

The Relationship between Work Environment and Employees' Self-directed Learning Readiness

The final purpose of this study was to identify which of work environment factors are related to employee's self-directed learning readiness. To begin with, simple correlation analysis was employed in order to determine whether employees' self-directed learning readiness is related to work environment. Because work environment factors were extracted by the varimax rotation method assuming that the correlation among factors was zero, the concern was put on the correlation between work environment and self-directed learning readiness. It revealed valuing individual differences was statistically significantly related to self-directed learning under a .01 significance level; teamwork and taking risks were under a .001 significance level.

Based on the preceding correlational analysis, further multiple regression analysis was conducted. According to the previous studies, not only environmental factors but also demographic variables and socio-psychological variable are related to self-directed learning readiness. Therefore, all these variables should be considered in the multiple regression analysis[3].

This study employed hierarchical multiple regression analysis entering variable clusters in the sequence of work environment factors, demographic variables, and job stability variables. In the first step, the effects of work environment factors were analyzed, and in the next two steps, incremental influences of demographic variables and

[3] In the multiple regression analysis, omission of relevant variables causes specification error and results in the wrong model and irrelevant conclusion (Pedhauzur, 1997).

job stability variables respectively were analyzed. The result of hierarchical multiple regression analysis is presented in Table 4.

In the first regression model, three work environment factors except for 'involving individuals' were statistically significant and explained 11.94% of the total variance of self-directed learning readiness. The second model adding demographic variables explained 16.11% of the total variance, and 4.18% of explained variance was incremented in this step. Lastly, job stability variables were added. Among added job stability variables, prospects for the job were statistically significant. The â change of the valuing individual differences factor was noteworthy. The â of valuing individual differences were reduced from .1140 to .0500 and the factor has been changed from a statistically significant to an insignificant variable. This result can be interpreted as that the valuing individual differences factor and the prospects for their job were correlated. That is, the more a company esteems individual differences, people think that their job will be more promising. As a final result of hierarchical multiple regression analysis, all variables explained 20.76% of the total variance of self-directed learning readiness and incremented variance in the third step was 4.56%.

Table 4. Hierarchical Multiple Regression Analysis

Variables		Step 1	Step 2	Step 3
Work Environment	Valuing Differences	.1362** (2.925)	.1140* (2.411)	.0500 (1.028)
	Teamwork	.2342*** (5.028)	.2131*** (4.532)	.2074*** (4.483)
	Involving Individuals	.0410 (.880)	.0479 (1.021)	.0049 (.106)
	Taking risks/Innovation	.2105*** (4.519)	.1790*** (3.771)	.1664*** (3.542)
Demographic Variable	Gender		-.0556 (-.929)	-.0775 (-1.321)
	Age		.0863 (.765)	.1094 (.984)
	Degree (High School)		---	---
	Degree (Undergraduate)		-.0001 (-.002)	-.0029 (-.052)
	Degree (Graduate)		.1779** (3.006)	.1948*** (3.371)
	Position (Employee)		---	---
	Position (Junior Manager)		.1591 (1.879)	.1735* (2.099)
	Position (Middle Manager)		.0191 (.189)	.0096 (.097)
	Position (Senior Manager)		-.0231 (-.228)	-.0280 (-.282)
	Marital Status		-.0725 (-1.150)	-.0720 (-1.169)
Job Stability	Aptitude toward company			.0039 (.070)
	Prospects for work			.1809*** (3.535)
R^2		.11938	.16113	.20763
Adjusted R^2		.11070	.13729	.18056

*** $p < .001$, ** $p < .01$, * $p < .05$

Conclusions and Recommendations

This research found that employees' academic career and job position statistically significantly explained their self-directed learning readiness and people had more autonomous learning needs when they did not think their job had bright prospects. In the case of work environment factors, teamwork and taking risks/ innovation were significant variables. That is to say, it can be concluded that when employees perceive that their company encourages them to change and innovate and they belong to a collaborative and reliable organization, those perceptions affects their self-directed learning readiness.

Cost and time needed for in-class training are a burden on almost companies. For this reason, many companies are concerned about cyber training and distance learning which do not require significant money and time to assemble. To utilize these learning methods, however, adult learners who can diagnose their own learning needs, find and use appropriate learning resources, determine the effort and time to be allocated to learning, and evaluate the results by themselves, that is, people who has readiness for self-directed learning are essential. Therefore, organizational efforts to encourage employees to improve their self-directed learning readiness; and to provide various supports and specific programs and methods which can improve employees' self-directed learning readiness should be studied more extensively.

This research was conducted in seven Korean companies. These companies were selected by the occupational classification of ILO, yet geographic region/ location or size of companies were not considered. Therefore, the findings can be hardly generalized to all employees of all kinds of Korean companies. An additional limitation of this study is that work environment factors were limited to subjective factors based on employees' perception, although it is based on the premise that employees' perceptions for work environment affects their behavior rather than objective characteristics of an organization are more significantly. The perceived environment may be incongruous with the actual work environment. Finally, this study used SDLRS to measure readiness for self-directed learning and assumed that the readiness is close to self-directed learning. However, the use of SDLRS is one of four themes which it is hard to obtain consensus among experts (Confessore & Confessore, 1993).

Based on these limitations, further research should be conducted in more diverse companies considering regions and size in order to generalize the results to a variety of companies. Also, not only the perceived work environment but also the objective work environment should be considered in order to analyze work environment factors affecting self-directed learning readiness more extensively. Lastly, specific methods to improve self-directed learning readiness should be investigated.

How this research contributes to new knowledge in HRD

Self-directed learning and the readiness are topics which have been concerned for a long time and have been studied extensively. Because of the potentiality which self-directed learning and the readiness could lessen the cost and time related to training, and the expectation which it would be closely related to employs job performance, self-directed learning has been gaining more attention in HRD field. Up to now, several research on the relationship between self-directed learning readiness and workplace has been conducted in U.S., but few research has been conducted in Korea in spite of the importance. Korea has been confronted with economic crisis for the last few years and is struggling to get out of it. Under the circumstance, investment and budget for training and development have been slashed, but ironically the importance of developing and improving employees' capability and skills to survive have been increased. In this vain, self-directed learners who can learn and find learning resources by themselves are getting attention by Korean companies and this research is meaningful in that it investigated the relationship between self-directed learning readiness and work environment in Korean.

Additionally, the result of this study can be compared with that of other study being conducted in different countries and various work settings. This comparative study will provide the idea about similarity and dissimilarity of workplaces of various countries and be helpful to internationally understand the relationship between self-directed learning readiness and work environment. This study is the first step toward further extensive study.

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Predicting Motivation to Learn and Motivation to Transfer in a Service Organization

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This exploratory study attempted to identify key predictors of motivation to learn and motivation to transfer as well as examine the relationship between the two variables. Organizational commitment, task cues, and coworker commitment to quality work were found to be the strongest predictors of motivation to learn. Motivation to learn, motivating job, and being expected to use the newly learned skills and knowledge were found to be the most important predictors of motivation to transfer.

Keywords: Motivation to Learn, Motivation to Transfer, Training Effectiveness

In today's rapidly changing and very turbulent environments organizations find themselves always scrambling for competitive advantage. Following the Toyota approach to lean enterprise, today's organizations are also striving to do more with less. Even many of the world's largest and traditionally successful companies have been forced to end their commitment to employment security and announce major cuts in their workforces (Finegold, 1998). At the same time though, organizations realize that to be successful and competitive they must continuously improve the way they organize and manage themselves. "How organizations are structured, how people are paid, how performance is measured, how individuals are trained and developed: increasingly, these are proving to be areas in which successful innovation can lead to improved performance and to sustainable competitive advantage" (Galbraith & Lawler, 1998; p. 1).

In this modern era of lean enterprise human resource development has received renewed interest. Organizations know that without having a highly skilled, committed, and motivated workforce their ability to compete and innovate is significantly handicapped. Thus, they invest a significant amount of their resources on employee development and training. In the U.S. alone, over $210 billion is invested annually on workplace training (Ford, Kozlowski, Kraiger, Salas, & Teachout, 1997). The only difference is that nowadays training investments are more and more strategically tied to the core competencies of the organization, scrutinized, and are increasingly expected to contribute to the organization's bottom line performance. But do corporations receive a good return on their training investments?

Some estimates indicate that only about 10% of the training related expenditures actually result in transfer of newly learned skills and knowledge back to the job (Baldwin & Ford, 1988; Broad & Newstrom, 1992; Facteau, Dobbins, Russell, Ladd, & Kudisch, 1995). If these estimates are correct, then it is of paramount importance that HRD scholars and practitioners identify the factors that can impede or facilitate training effectiveness and tie such effectiveness to bottom line organizational performance. Interestingly, "most research on training uses trainees' reactions to a course and their beliefs about the amount they have learned to assess its effectiveness" (Axtell, Maitlis, & Yearta, 1997; p. 201).

In general, researchers and practitioners in the field of training evaluation have long used Kirkpatrick's model for assessing the effectiveness of training programs (Mathieu & Martineau, 1997). Recently, "there has been a call for an expanded view of training effectiveness... the role of training variables such as trainees' motivation and attitudes, both before and after training, should be investigated more thoroughly" (Mathieu & Martineau, 1997; p. 193). Mathieu and Martineau (1997) emphasize that the "effects beyond the immediate training program, such as individual and situational influences, should be considered if a more complete understanding of what makes for effective training is to be developed" (p. 193).

With regard to training motivation, a number of researchers have stated that unless trainees are motivated to learn during training, even the most sophisticated training programs cannot be effective (Axtell et al., 1997; Clark, Dobbins, & Ladd, 1993; DeSimone & Harris, 1998; Facteau et al., 1995; Mathieu & Martineau, 1997; Noe, 1986). "Research has shown that trainees who are motivated on entry into a training program clearly have an advantage from the beginning" (Mathieu & Martineau, 1997; p. 196). This statement is in agreement with the results of two studies which found pretraining motivation to be positively related to posttraining changes in behavior and attitudes

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as well as training transfer (Facteau et al., 1995; Tannenbaum, Mathie, Salas, & Cannon-Bowers, 1991; Warr, Allan, & Birdi, 1999).

Despite the fact that motivation to learn has been recognized as a critical factor for training effectiveness, very little research has been conducted to examine the factors that foster such motivation (Clark et al., 1993; Facteau etal. 1995). In general, motivation to learn has been found to be influenced by personal and situational characteristics (Mathieu & Martineau, 1997). Personal characteristics mostly pertain to personal attributes or attitudes that directly or indirectly affect the extent to which a trainee is motivated or has the ability to learn. Such personal characteristics are self-efficacy, locus of control, need for achievement, independence, extraversion, openness to experience, and cognitive playfulness (DeSimone & Harris, 1998; Mathieu & Martineau, 1997). Attitudes that have been found by research to have an effect on learning are those related to career exploration and job involvement (Noe, 1986).

In terms of situational characteristics, a study by Clark et al. (1993) found career and job utility to be predictors of training motivation. In this study, career utility was defined as the perceived usefulness of training for attainment of career goals. Job utility was defined as the perceived usefulness of training in facilitating the attainment of job goals. According to Clark et al. (1993), a limitation of their study was the exclusion of such important variables as job involvement, organization commitment, and achievement motivation from its design.

A study by Facteau et al. (1995) found the following constructs to be significant predictors of pretraining motivation: training reputation, intrinsic and compliance incentives, organization commitment, and social support for training. This study once again found pretraining motivation to be a predictor of training transfer. Further, this study validated the results of the Tannenbaum et al. (1991) study, which also found organization commitment to be highly associated with motivation to learn.

A more recent study that investigated the motivation to learn construct was that conducted by Kontoghiorghes (2000). What distinguished this study from the previous ones is that it took a more systemic approach toward motivation to learn and incorporated in its design organizational variables that were perceived to affect motivation to perform as well. Given that the ultimate goal of training is to improve performance, the underlying assumption of this study was that motivation to learn not only would be influenced by the immediate learning environment but by organizational variables that are perceived to also influence employee and organizational performance. In short, the results of this study suggested that motivation to learn during training would be greater if the trainee holds a job that assures him or her task autonomy, receives such extrinsic rewards as pay and promotion when applying newly acquired skills and knowledge, and functions in a quality driven organization within which people live up to high ethical standards. A limitation of this study was the small sample (N=75) used as well as the exclusion of the organization commitment construct from its design.

Purpose of the Study

Given the demonstrated importance of the motivation to learn for training effectiveness, as well as the lack of research in this area, the main purpose of this study was to identify additional key variables within the organizational and learning context that could affect motivation to learn. In the process of doing so, this study also attempted to address some of the limitations of earlier studies. In particular, the limitations of the Clark et al. (1993) and Facteau et al. (1995) studies were addressed by investigating the relationship between organizational climate variables and motivation to learn. Moreover, this study addressed the limitation of the Kontoghiorghes (2000) study by incorporating in its design the organization commitment dimension as well as utilizing a bigger sample. Lastly, given the scarcity of research linking motivation to learn and training transfer, another goal of this exploratory study was to describe the relationship between the two variables.

Theoretical Framework

The theoretical and conceptual framework of this study was based on the sociotechnical systems (STS) and total quality management (TQM) theories as well as previous empirical research on motivation to learn and training transfer. Based on the above described theories and research a survey instrument was developed which in turn helped assess all relevant variables pertaining to this study. Briefly, the STS dimensions of the instrument helped determine the extent to which the employees functioned in a system whose design was consistent with STS principles. The thesis of STS theory is that organizations are comprised of two interdependent subsystems, a social system and a technical system, and that changes in one system affect the other system (French & Bell, 1999). Thus, an STS organization is viewed as an open system of coordinated and interrelated human and technical activities, which in turn can not be considered in isolation (Harvey & Brown, 2001). A core principle of sociotechnical design

is that the organization must optimize both subsystems in order to achieve high productivity and employee satisfaction. Other core principles of STS design pertain to the formation of autonomous work groups and flatten hierarchies, training group members in multiple skills, giving information and feedback to the people doing the work, designing challenging and motivating jobs, organizing around process-not tasks, rewarding team performance and learning, controlling variance at its source, and be customer driven (French & Bell, 1999; Harvey & Brown, 2001; Lawler & Mohrman, 1998; Pasmore, 1988). According to Pasmore (1988), STS designed organizations "have been demonstrated to produce high levels of commitment and performance" (p. 157). In terms of TQM, the quality management dimensions of the instrument helped determine the extent to which the organization functioned as an excellence and quality driven system with great emphasis on continuous improvement. Finally, based on the results of previous empirical research, questionnaire items were developed to assess the extent to which the employee functioned in an environment that was conducive to training transfer and continuous learning.

In all, this study incorporated in its design variables from the following learning and organizational dimensions: training transfer climate; learning climate; management practices; employee involvement; organizational structure; communication systems; reward systems; job design; job motivation; organization commitment; job satisfaction; innovation practices; technology management; teamwork climate; ethical work culture; and process improvement climate. Organizational performance was defined in terms of the following dimensions: quality, productivity, competitiveness, innovation, rate of change adaptation, and rate of new technology adaptation.

Research Questions

This study attempted to answer the following research questions:

1. Which of the organizational and learning climate variables incorporated in the study can serve as key predictors of motivation to learn during training?
2. Which of the organizational and learning climate variables incorporated in the study can serve as key predictors of motivation to transfer learning back to the workplace?
3. What is the relationship between motivation to learn and motivation to transfer?

Methodology

Instrument. The instrument of this study consisted of a 108 Likert item questionnaire, which was designed to assess the organization in terms of the earlier described dimensions. Many of the dimensions were assessed with scales that were used or described in previous instruments or research (Buckingham & Curt; 1999; Hackman & Oldham, 1980; Lindsay & Petrick, 1997; Macy & Izumi, 1993; Pasmore, 1988; Pasmore, Francis, Haldeman, & Shani 1982; Rouiller & Goldstein, 1993; Tracey, Tannenbaum, & Kavanagh, 1995; Whitney & Pavett, 1998), while several were designed specifically for this study. This second generation instrument utilized a six-point scale that ranged from "strongly disagree" to "strongly agree". The first version of the questionnaire consisted of 99 Likert items and was originally pilot-tested on a group of 15 participants for clarity. Furthermore, a group of seven experts reviewed the instrument for content validity. Upon revision, the instrument was then administered to a group of 129 members of four different organizations. Reliability tests were conducted and the instrument was further refined and expanded to 108 items.

Subjects. The sampling frame of this study consisted of 256 employees of a national corporation in the health care insurance industry. The employees were given the survey instrument at scheduled staff meetings. 192 out of the 256 employees returned the survey and the response rate was calculated at 75%. In all, 86.4% of the respondents were females and 13.6% males. In terms of education, 14% had a high school degree, 27.9% an associates, 39.5% a bachelors, 13.4% a masters, and 3.5% a PhD. 1.7% of the respondents did not indicate an educational level. In terms of position held in the organization, the frequency distribution identified 4.1% of the respondents as either a vice president or director of the unit, 4.1% as managers, 11.6% as supervisors, 65.7% as salaried professional, 12.8% as administrative personnel, and 1.7% as hourly employees.

Data analysis. Based on the gathered data, correlational and regression analysis were used to answer research questions 1 and 2. More specifically, through Pearson correlations and stepwise regression analyses the most significant predictors for the motivation to learn and motivation to transfer variables were identified. To answer research question 3, or to describe the degree of association between motivation to learn and motivation to transfer, a Pearson correlation was utilized. The degree of association between the two variables was further

assessed by identifying the predictive utility of motivation to learn when building the regression model for motivation to transfer. Lastly, the reliability of the instrument was measured in terms of coefficient alpha and was calculated at 0.986.

Results and Findings

In total, the motivation to learn and motivation to transfer variables were found to be positively and significantly correlated with 101 and 90 of the other 107 variables incorporated in the questionnaire respectively. The correlations ranged from 0.149 to 0.558 and covered all dimensions incorporated in the questionnaire. This finding is indicative of the systemic nature of training effectiveness and its dependence on many factors outside the learning context. Given the large number of significant correlations found for both variables, Tables 1 and 2 summarize only those that were found to be above 0.4.

As shown in Table 1, motivation to learn was found to be highly correlated with variables that predominantly comprised the learning, job design, quality management, and organization commitment dimensions. In particular, the data in Table 1 suggests that a trainee will be more likely to be motivated to learn during training if

Table 1. Pearson Correlations of Motivation to Learn During Training

Variable	Motivation to Learn
Learning Environment Variables	
Learning is well rewarded	r = .401** (N = 192)
Expected to use new skills and knowledge	r = .405** (N = 192)
Continuous learning is a priority	r = .418** (N = 191)
Motivation to transfer	r = .464** (N = 191)
Task cues	r = .475** (N = 191)
Learning and growth opportunities	r = .476** (N = 190)
Job Design Variables	
Job takes advantage of talents and abilities	r = .410** (N = 191)
Job importance	r = .442** (N = 191)
Task autonomy	r = .452** (N = 192)
Motivating job	r = .452** (N = 192)
Support for development	r = .463** (N = 191)
Have opportunity to do what I do best	r = .476** (N = 191)
Quality Management Variables	
Customer needs are important	r = .405** (N = 186)
Use objective data for quality improvement	r = .422** (N = 186)
Emphasis on doing things right the first time	r = .436** (N = 187)
Coworkers committed to quality work	r = .438** (N = 191)
Job contributes to quality mission	r = .450** (N = 191)
Organization Commitment and Satisfaction	
Company satisfaction	r = .425** (N = 187)
Committed to this company	r = .558** (N = 189)

**. Pearson correlation is significant at the 0.01 level (2-tailed)

he or she functions in an environment that a) is characterized by a high degree of employee commitment; b) provides the employees with learning and growth opportunities as well as support for development; c) allows the employees to have the opportunity to do what they do best and takes advantage of their talents and abilities; d) is

conducive to job motivation and allows task autonomy; and, e) is quality and customer driven. Finally, the data in Table 1 suggests that trainees will be more likely to be motivated to learn during training if the new skills and knowledge to be learned are very similar to the actual tasks performed on the job.

In terms of the motivation to transfer, the correlations in Table 2 suggest that a trainee will be more motivated to transfer the newly learned skills and knowledge back to the workplace if he or she a) is motivated to learn; b) finds his or her job motivating and important; c) is provided with learning and advancement opportunities; d) is committed to the company; and e) is expected to use the new skills and knowledge back on the job.

Table 2. Pearson Correlations of Motivation to Transfer

Variable	Motivation to Transfer
Learning Environment Variables	
Expected to use new skills and knowledge	r = .400** (N = 191)
Learning and growth opportunities	r = .425** (N = 190)
Motivation to learn	r = .464** (N = 191)
Job Design Variables	
Opportunities for advancement	r = .400** (N = 190)
Job importance	r = .424** (N = 190)
Motivating job	r = .444** (N = 191)
Organization Commitment	
Committed to this company	r = .403** (N = 188)

**. Pearson correlation is significant at the 0.01 level (2-tailed)

Comparing the type and number of variables found in both correlational tables, one can observe that all variables that were found to exhibit a correlation of 0.4 or higher with the motivation to transfer variable, were also found to be highly associated with motivation to learn. In all, these variables stemmed from the learning, job design, and organization commitment dimensions. Further, motivation to learn was found to be the variable most highly associated with motivation to transfer. Motivation to learn was in turn found to exhibit its highest correlation with organization commitment. What this finding seems to suggest, is that motivation to learn and motivation to transfer are highly interlinked and influenced by a set of common variables. This exemplifies the importance of motivation to learn, when it comes to successful training transfer.

In terms of the regression analysis, the regression model for motivation to learn is displayed in Table 3 and for motivation to transfer in Table 4. As it is shown in Table 3, the selected 11 variables incorporated in the motivation to learn regression model accounted for 57.6% of its variance. At 30.7%, and thus accounting a little more than half of the total variance, organization commitment proved to be the strongest predictor of motivation to learn. Task cues, or the extent to which training is very similar to the actual tasks performed on the job, was the second predictor selected by the model and accounted for 9.9% of the total variance. The other two predictors that made a significant contribution in this model were those pertaining to coworkers being committed to quality work and task autonomy. The latter two variables accounted for 5.6% and 4% of the total variance respectively.

According to the regression model depicted in Table 4, six variables accounted for 34.7% of the variance of the motivation to transfer variable. Accounting for 21% of the total variance, motivation to learn was found to be the strongest predictor of motivation to transfer. Having a motivating job was chosen next by the stepwise regression model. The other predictors selected were: the trainee is expected to use the newly learned skills and knowledge back on the job; coworkers are committed to quality work; the trainee functions in an environment that provides opportunities for advancement; and, the employee functions in an environment within which teamwork is rewarded.

Table 3. Stepwise Regression Model for Motivation to Learn During Training[a,b,c]

Model	Variables Entered	Variables Removed	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	Committed to this company		.558	.311	.307	1.06
2	Task cues	.	.643	.413	.406	0.98
3	Coworkers committed to quality work	.	.686	.471	.462	0.93
4	Task autonomy	.	.717	.514	.502	0.90
5	Have best friend at work	.	.726	.527	.513	0.89
6	Participative organization	.	.734	.539	.522	0.88
7	Continuous learning is a priority	.	.746	.557	.539	0.86
8	Customer loyalty	.	.756	.572	.551	0.85
9	Excellence commitment	.	.763	.582	.560	0.84
10	Peer output complete	.	.770	.593	.568	0.84
11	Opportunity to do what I do best	.	.776	.603	.576	0.83

a. Dependent Variable: Motivation to Learn During Training; N = 174
b. Method: Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
c. F = 22.49, p < 0.001

Table 4. Stepwise Regression Model for Motivation to Transfer[a,b,c]

Model	Variables Entered	Variables Removed	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	Motivation to learn		.464	.215	.210	0.88
2	Motivating job	.	.533	.284	.276	0.85
3	Expected to use new skills and knowledge	.	.559	.313	.301	0.83
4	Coworkers committed to quality work	.	.578	.334	.319	0.82
5	Have opportunities for advancement	.	.593	.352	.333	0.81
6	Teamwork rewarded	.	.608	.369	.347	0.80

a. Dependent Variable: Motivation to Transfer; N = 174
b. Method: Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
c. F = 16.406, p < 0.001

Conclusions and Recommendations

In all, the results of this study supported the findings of some earlier studies while at the same time gave some new insights in the training motivation and effectiveness areas. First, motivation to learn was proven to be a strong predictor of motivation to transfer. This finding in essence a) validates the results of several studies that linked training motivation to training transfer (Facteau et al., 1995; Tannenbaum, Mathie, Salas, & Cannon-Bowers, 1991; Warr, Allan, & Birdi, 1999), and b) exemplifies the importance of addressing the motivation to learn component when assessing the training transfer climate. Simply put, if trainees are not motivated to learn in the first place, little or no training transfer will occur regardless of how well training was designed and conducted, or how conducive the organizational climate is to training transfer.

The strong association between motivation to learn and motivation to transfer further attests to the significance of the former when evaluating training effectiveness, and also supports Mathieu's and Martineau's (1997) call for an expanded view of training effectiveness. What the findings of this study suggest, is that training effectiveness will be facilitated further if the factors affecting motivation to learn are assessed and if necessary addressed before even the training program is implemented.

The results of this study also supported the outcomes of the Facteau et al. (1995) and Tannenbaum et al. (1991) studies, which found employee commitment to the organization to be a strong predictor of motivation to learn. Since commitment to quality work was found to be a predictor for both, motivation to learn and motivation to transfer, this study also supported the results of the Kontoghiorghes (2000) study which in turn found motivation to learn to be positively related to a quality driven culture. The latter finding also confirms the assumption that training motivation, and hence training effectiveness, are indeed influenced by organizational variables that directly or indirectly affect employee or organizational performance.

Finally, another significant finding of this study is the identification of job motivation as an important predictor for training transfer. This is an important finding because in many respects helps enhance the conceptual framework of the training transfer domain and reinforces the point that training effectiveness cannot be studied in isolation. Training may indeed take place in an environment that is highly conducive to training transfer; but would the trainee be motivated to transfer the new skills and knowledge back to the job if he or she does not find his or her job motivating?

How this Research Contributes to new Knowledge in HRD

As stated in the introduction, motivation to learn has been identified by many researchers as a critical component for training effectiveness. Despite its importance, however, very limited research has been conducted to develop a better understanding of it. Further, a limitation of previous research was the exclusion of the organizational climate from its design. By taking a more systemic approach, this study was able to explore the validity of earlier findings as well as identify some new important variables for motivation to learn and motivation to transfer. A limitation of this study was the fact that the data was collected form a single source. Thus, replication of this study in different organizational settings and industries will help determine the validity of its results.

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Author Names	Sharon S. Naquin Elwood F. Holton III
AHRD Reference #	061

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Author Names	Ji-Hye Park
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Paper Title	Predicting Motivation to Learn and Motivation to Transfer in a Service Organization
Author Names	Constantine Kontoghiorghes
AHRD Reference #	129

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