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Do Motives Matter? An Examination of Reasons for Attending Training and Their Influence on Training Effectiveness

by

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE Doctor of Philosophy

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ABSTRACT

Do Motives Matter? An Examination of Reasons for Attending Training and Their Influence on Training Effectiveness

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AnJanette Agnew Nease

Previous training research has typically considered individuals' motives for attending training as voluntary or mandatory. This study expanded upon previous research by exploring the various motives or reasons that individuals have for attending training and development programs. A review of previous research on training suggested six reasons or motives as potential determinants of individuals' decisions to attend training. A model was developed proposing individual and contextual variables as antecedents of reasons for attending training, and relationships were hypothesized between attendance motives, pre-training motivation to learn, and indicators of training effectiveness. Participants were one hundred seventeen mathematics teachers of various grade levels (K-12) who attended a summer professional development program. The program was designed to improve content knowledge of mathematics and promote nationally recognized instructional practices. Participants completed two surveys, administered before and after the four-week program. Results provided support for hypothesized key reasons for attending training: compliance, skill improvement, intrinsic
interest, career management, and performance standards. Individuals who reported attending the program based on intrinsic interest or a desire for skill improvement also reported higher motivation to learn, while those who attended due to a compliance motive were less motivated to learn. Performance and goal orientation emerged as significant predictors of individuals' reasons for attending training. Further, motivation to learn was positively related to training reactions. The results suggest that individuals' decisions to attend training and development programs may be based on complex factors and personal goals. Implications for future research are discussed.
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Do Motives Matter? An Examination of Reasons for Attending Training and Their Influence on Training Effectiveness

In recent years, training has become the focus of increased attention and research. This growing interest in training is due to several factors. From an organizational perspective, the rapid pace of changing technology has resulted in greater organizational reliance on training to keep workers aware of recent technology and mindful of productivity (Rosow & Zager, 1988). Further, demographic trends in the workforce demonstrate that the rate of growth in the U.S. workforce is in a steady decline (Cascio & Zammuto, 1987; London, 1989). At the same time, the number of middle age and older workers is increasing substantially (Sandell, 1987; Thayer, 1997). As a result of these and other factors, organizations have begun to scrutinize their staffing strategies and human resource practices more carefully (Goldstein, 1989). Training and re-training workers at levels ranging from entry-level to highly technical, specialized positions has become an essential strategic tool.

Evidence also suggests that employees share a growing interest in training as an opportunity and tool for growth and advancement. For example, some researchers have suggested that the perceived relationship between employees and their employers is shifting. Where employees of the past likely expected to remain with the same employer throughout their career, employees today are likely to perceive the psychological contract much differently (London & Bassman, 1989; Pfeffer, 1998). Workers today often expect to move from job to job frequently in an effort to further their career and job opportunities. Such career attitudes toward work and employers may lead employees to
view training as an opportunity to further career objectives and meet personal goals. It is increasingly clear that employees place a premium on training, both for the skills that can be applied to current positions and the career advantages that such programs can provide.

The growing use of training as a solution to organizational problems has been matched by an increase in research on factors influencing training effectiveness. Recent years have been marked by a shift toward the study of pre-training characteristics and their relationship to various training outcomes. Noe (1986) argued that while typical studies assess training effectiveness through the measurement of traditional post-training criteria, little research has focused on examining reasons why training programs are effective, or why some programs are only effective for certain individuals but not others. In recent years, several studies have examined the influence of pre-training variables such as trainee attitudes and expectations (Noe & Schmitt, 1986; Quiñones, 1995; Tannenbaum, Matheiu, Salas, & Cannon-Bowers, 1991).

Previous research on the pre-training environment has shown that one important influence on training effectiveness is trainees' motivation to learn training material. Numerous studies have shown that trainees' motivation influences such outcomes as decisions to attend training, effort, learning, self-efficacy, reactions to training, and transfer of trained behaviors to the job (Baldwin & Ford, 1988; Mathieu et al., 1992; Noe & Wilk, 1993; Quiñones, 1995; Ryman & Biersner, 1975; Tannenbaum, Mathieu, Salas, & Cannon-Bowers, 1991). Research also has demonstrated that trainees' motivation to learn is influenced by a number of factors, both internal and external (Kanfer, 1990a). These factors include individual differences among trainees.
Researchers also have begun to study the influence of the organizational context on training outcomes, consistent with repeated calls for a more detailed examination of the context surrounding training (Campbell, 1989; Goldstein, 1993; Baldwin & Magjuka, 1997; Mathieu & Martineau, 1997; Quiñones, 1997). Contextual factors such as participation in the selection of training content (Baldwin, Magjuka, & Loher, 1991) and the way in which training is framed (Martocchio, 1992; Quiñones, 1995) have been shown to have important effects on the training process.

Recent years have been marked by a call for a greater understanding of what trainees expect to gain from training and how such expectations influence training effectiveness. For example, in a survey of Norwegian workers, Nordhaug (1989) solicited input regarding what trainees perceived as the rewards of training. Researchers also have noted that “the whole issue of expectations about training itself has to be explored more fully” (Feldman, 1989, p. 381). In one of the few empirical studies to examine training expectations, Tannenbaum et al. (1991) found that the extent to which trainees’ expectations regarding aspects of the training program were fulfilled predicted such posttraining attitudes as organizational commitment, self-efficacy, and training motivation.

Along with trainees’ varying expectations about the content and nature of training programs, trainees also vary in terms of their motives or reasons for attending training programs. That is, trainees are likely to have varied expectations regarding the goals that they bring to training and the reasons why they are attending training in the first place. Yet, no research to date has explored the issue of trainees’ reasons for attending training programs. More specifically, no studies have examined the extent to which trainees’
reasons or motives for attending training affect key training variables, including pre-
training motivation. This is in spite of the fact that trainees attend training programs with
very different goals and motives in mind.

The purpose of the present study is to identify and examine the impact of trainee
motives. Further, the study expands current conceptual models on the pre-training
context by placing trainee motives in a framework linking individual and contextual
variables to training outcomes throughout the training process. In the following sections,
I review previous research and propose a number of potential reasons why trainees might
attend training programs. I then propose a set of individual and contextual characteristics
that may influence reasons for attending training programs. Finally, a model is presented
that links individual and contextual antecedents of training motives with reasons for
attending training. These reasons or motives for attending training programs are then
linked with demonstrated indicators of training effectiveness, including motivation to
learn and reactions to training.

Reasons for Attending Training

In recent years, it has been argued that issues regarding the expectations of
trainees need to be examined more thoroughly (Feldman, 1989). More specifically,
researchers have argued that trainees’ expectations regarding what they expect from their
training experience and the degree to which such expectations are fulfilled may influence
training outcomes, including motivation to learn, self-efficacy, and commitment to
training (Tannenbaum et al., 1991).

In all, however, research has been lacking on the significance and impact of
individual differences in motives, expectations, and goals. One exception is a study by
Nordhaug (1989) that examined the benefits of training programs as perceived by trainees. Interviews were conducted with Norwegian employees, who were asked whether their training experiences had contributed to numerous outcomes (participants responded yes or no to various described outcomes). Results of a factor analysis indicated three primary reward dimensions of training. The first dimension consisted of increased interest in learning training material, while the second and third dimensions included increased career development possibilities (including promotion and job autonomy) and psychosocial development. While this study illuminated possible rewards and benefits of training, more research is needed that identifies what trainees expect to gain from training, as well as the significance of such motives or reasons.

Researchers studying trainee motivation typically assume that trainees vary in the attitudes they bring to the training setting. For example, some have stated that trainees “may enjoy the challenge of learning, others may prefer to think of training as an opportunity to achieve their goals, whereas others may view the experience as a total waste of time. In short, different people will want different things from training…” (Mathieu & Martineau, 1997, p. 199).

Other researchers have similarly noted that trainees approach training with varying expectations and attitudes (Noe, 1986), yet no studies have examined how trainees view the training experience in terms of their motives. In other words, no studies have specifically examined what trainees perceive to be the reasons behind their attendance at training, or whether these reasons might affect trainee motivation to learn and training effectiveness. In the following section, a framework is developed for examining possible reasons for attending training programs.
Intrinsic interest. One possible reason for attending training is simply a trainee’s interest in the training subject matter. Traditional studies of training motivation have shown that individual characteristics are important determinants of trainees’ motivation to learn training material (Mathieu et al., 1992; Tannenbaum et al., 1991). Similarly, it is argued that individuals may approach the training environment with varying levels of intrinsic interest in the course material, which may influence their training experience.

Deci’s cognitive evaluation theory of intrinsic motivation is based on the argument that individuals possess an innate need for competence and self-determination (deCharms, 1968; Deci, 1975). Individuals’ beliefs that their behavior is personally determined and not caused by an external force provide a sense of intrinsic gratification. Thus, intrinsic motivation may be defined as the motivation to perform a task in the absence of apparent external contingencies or rewards (Deci & Ryan, 1980; Daniel & Esser, 1980). It is argued that when individuals are intrinsically motivated, they will engage in ongoing attempts to seek out new challenges and to meet those challenges.

Intrinsic motivation theorists argue that behaviors stem from either external forces or internal motives that are common to all individuals (Deci, 1975; Kanfer, 1990a). Early research on intrinsic motivation demonstrated that when offered extrinsic rewards for performing an interesting task, both individuals’ self-reports of task interest and the amount of time spent performing the task in free-choice periods decreased after that reward was removed (Calder & Staw, 1975; Deci, 1975). This phenomenon was labeled the overjustification effect (Lepper, Greene, & Nisbett, 1973). Researchers have argued that the overjustification effect occurs when persons believe that external rewards are responsible for their behavior, rather than their own innate motivation or curiosity.
In spite of research supporting the undermining effects of extrinsic rewards on intrinsic motivation, other findings suggest that rewards do not automatically decrease intrinsic motivation (see Deci & Ryan, 1980; Fisher, 1978). Such findings have led researchers to propose that rewards contain various properties, including both "controlling" and "informational" properties (Deci, 1975). Controlling rewards are associated with a perception of external locus of causality and thus are linked with extrinsic motivation and the overjustification effect. In contrast, informational rewards provide individuals with information about their competence and efficacy with regard to the task at hand, and thus are associated with an internal locus of causality (Deci, 1975; Harackiewicz, Manderlink, & Sansone, 1984). Thus, intrinsic motivation may be present in situations where external rewards are present, if rewards are perceived as informational. In an organizational setting, intrinsic interest may be one reason for attending training programs, even in the presence of external rewards or reasons for attending such programs.

**Career management and skill improvement.** Individuals might also attend training programs because they perceive that such attendance poses a career opportunity. That is, individuals may feel that by attending a particular training program and/or by mastering the material being trained, they are giving themselves a career advantage.

This motive or reason for attending training shares many similarities to the expectancy framework of training motivation discussed previously (Baldwin & Magjuka, 1997; Mathieu et al., 1992; Tannenbaum et al., 1991). Researchers using this framework have drawn from the extensive literature on valence-instrumentality-expectancy (VIE) to create measures of training motivation (Vroom, 1964). According to a VIE framework,
training motivation is maximized when individuals believe that there is some value or benefit to learning training content. Thus, in these studies, training motivation is measured by assessing trainees' expectancies regarding the perceived relationship between success in a training program and future job performance, as well as the extent to which such improved job performance is associated with various desired outcomes. Such outcomes include improved job assignments, increased salary, co-worker respect, and a sense of accomplishment.

This interpretation of the concept of training motivation suggests that some trainees approach the training situation with a perception that training provides career-related advantages. That is, it is argued that trainees who associate training with future success on the job are likely to report that career advancement is a motive or reason for attending training, and is therefore an incentive to learn the material being presented. Such a proposition is consistent with models of professional updating (see Dubin, 1990), which suggest that employees' willingness to engage in updating activities is heavily influenced by beliefs about the efficacy and utility of updating for obtaining valuable work-related outcomes (Farr & Middlebrooks, 1990). There is some empirical evidence which suggests a relationship between beliefs about the benefits offered by development activities, including training, and willingness to participate in such activities. In a survey of employees' attitudes regarding participation in development activities, Noe & Wilk (1993) found that employees who believed that development activities resulted in career benefits such as avoiding obsolescence and meeting career goals were more likely to have participated in such activities. They also were more likely to report future plans to participate in development activities.
To date, no studies have explicitly tested these propositions in a training context; however, such an argument is consistent with Nordhaug’s (1989) findings regarding the perceived benefits provided by training opportunities. As discussed previously, Nordhaug’s research suggested that employees associate participation in training programs with increased career benefits, including the opportunity to reach career objectives and enhance chances for promotion.

An examination of the perceived career benefits of training also should consider the possible types of career advantages that training can provide. An individual may attend training because he/she sees such training as a necessary hurdle for achieving career goals such as promotion, salary increases, and recognition. For example, it is likely that many individuals believe that in order to advance within their employment organization, certain training programs must be attended. Such beliefs may be based on either an explicit or implicit set of standards promoted by the employer, or on beliefs maintained by the employee.

While some individuals may feel that their participation in training programs will lead to career benefits, others are likely to be more interested in the actual skills that such training can provide. More specifically, employees may feel a need to develop and improve upon job-related skills, perhaps to maintain their current positions or their general marketability. Recent years have been marked by a shift in corporate attitudes toward training. In contrast to previous efforts aimed at preparing entry-level workers, corporations today offer training programs designed to update the skills of all employees (Mandel, 1987; Rosow & Zager, 1988). This shift toward a continuous learning philosophy is due to several factors, the most significant being the rapid advancements in
technology influencing organizations today. As new technologies evolve, companies must ensure that employees in various positions maintain their skills and awareness of new developments in their fields.

Due to these and other factors, it is increasingly the case that individual job security is linked to retraining or continuous learning opportunities (London & Bassman, 1989). As organizations have adapted to the current environment of technological advances and global competitiveness, so has the psychological contract between employees and employers. In contrast to previously held beliefs that an employer could be counted on to provide a job for its workers with satisfactory job performance, there is evidence that a new psychological contract is evolving (London & Bassman, 1989). This new contract implies that employees should not count on continued employment with the same organization over the course of their careers; rather, they are expected to seek out and take advantage of opportunities to develop new skills through retraining. By taking advantages of these opportunities, employees both enhance the probability of continued employment with the same employer, as well as the probability of gaining suitable employment elsewhere.

Due to the growing emphasis on continuous learning and its corresponding focus on retraining, it is likely that individuals place a greater emphasis on training as a tool for maintaining job skills and marketability, both within and outside the organization with which they are currently employed. More specifically, it is argued that many employees may attend training because of a belief that training in a particular area or topic will lead to additional career opportunities and employment security. Thus, for many employees, maintenance of current skills may be a powerful motive or reason to attend training.
Through the maintenance and updating of their job skills, such employees may enhance their marketability as well.

**Performance standards.** A third potential reason for attending training could be the opportunity that training provides for socializing new employees. For many employees, their first introduction to a new organization comes through training programs designed to orient employees to organizational practices and their specific job duties (Wanous, 1980). Employees who are switching jobs or assuming new responsibilities within the same organization are often sent to training programs as well.

It is increasingly the case that training plays a major role in the determination of individuals' initial perceptions of organizational norms, practices, and values (Feldman, 1989). Recent years have been marked by a greater understanding of the role that training plays in socializing employees, and greater research emphasis on the relationship between training and socialization of new employees. As research in this area grows, training researchers have drawn from the socialization literature to form new research questions. More specifically, it has been argued that “implicitly, training research has conceptualized the newcomer as a relatively passive agent with, if not a tabula rosa, at least a relatively uncluttered schema. The socialization research suggests that research in the training area should be reframed to consider the active role that newcomers play in their own learning” (Feldman, 1989, p. 407).

It seems clear that organizations rely increasingly on training as a tool for socializing workers entering the organization or beginning new jobs within the same organization. Further, it is likely that such individuals attend training programs, in part, because such training programs offer an opportunity to learn the accepted standards,
practices, and values of the organization. Thus, it is proposed that individuals might report a desire to learn about performance standards and expectations as one reason or motive for attending training programs.

Compliance. Individuals' desire to comply with the explicit or implicit demands of superiors may be another powerful motive for attending training programs. For example, an individual might feel compelled to attend a particular training course for reasons including, but not limited to, supervisor directive, company-wide directive, or because attendance at a particular training program is associated with a particular position. Depending on the source, many trainees are likely to report that compliance with direct or indirect order(s) is an important reason for attending training programs.

Entitlement. A final possible motive for attending training regards an individual's sense that he or she deserves to attend training. That is, it is possible that some employees feel that training is a reward or benefit offered by the organization, and that for one reason or another, they are entitled to such a reward.

Individuals may view training as a benefit associated with employment at a given organization. More specifically, as the psychological contract between employees and organizations is rewritten, training is increasingly viewed as a perk or benefit that may attract talented individuals (London & Bassman, 1989). In fact, the training opportunities offered by organizations are increasingly considered to be a major inducement to take particular jobs (Feldman, 1989). Thus, individuals may see training as an opportunity that has either explicitly or implicitly been offered to them, and thus as an entitlement.

Conclusion. It has been argued that in spite of recent calls for a greater understanding of trainees' expectations, desires, and motives, no research to date has
examined the potential effects of trainees’ reasons or motives for training attendance on key training variables, particularly training motivation. Previous research on training was reviewed, and a set of potential motives for attending training was presented.

The framework developed suggests the existence of several major reasons for attending training programs, including intrinsic interest, career management, skill improvement, performance standards, compliance, and entitlement. It is important to note that these motives are not assumed to be mutually exclusive. That is, it is possible and in fact likely that any given trainee may list several of the proposed motives as reasons for attending a particular training program.

**Individual Differences as Predictors of Reasons for Attending Training**

Although no studies have categorized or examined the influence of reasons for attending training, the literature reviewed in the previous section suggests that there may in fact be numerous motives or reasons for attending training courses. It has been argued that trainees attend training for various motives or reasons. These motives may be influenced by numerous variables, including individual characteristics as well as contextual factors. An examination of individual characteristics that may influence trainees’ motives for attending training programs is now presented.

**Self-efficacy.** Self-efficacy may be defined as individuals’ beliefs that they can organize and execute actions required to achieve successful levels of performance (Bandura, 1986). As conceptualized in Bandura’s social cognitive theory (see Bandura, 1977; 1982; 1986), self-efficacy is an individual’s representation of the various factors that promote or limit performance on a given task, including ability, motivation, and situational factors.
Self-efficacy beliefs are comprised of three main characteristics: magnitude, generality, and strength (Bandura, 1977). More specifically, magnitude refers to the level of performance difficulty that individuals believe they can achieve, while generality refers to the extent to which beliefs in self-efficacy and control over performance extends beyond the immediate task or situation to a broader environment. The strength of self-efficacy beliefs refers to the certainty of beliefs, reflecting the extent to which individuals possess strong expectations of successful performance.

Self-efficacy serves a regulatory function, as it influences an individual’s effort and persistence at a given task (Bandura, 1991). As such, self-efficacy has been shown to have significant effects on performance (Bandura, 1991; Taylor, Locke, Lee, & Gist, 1984), as well as learning (Campbell & Hackett, 1986; Wood & Locke, 1987). Self-efficacy also has been shown to be a key influence on individuals’ reactions to performance feedback (Bandura, 1986; Nease, Mudgett, & Quiñones, in press; Podsakoff & Farh, 1989). Further, there is strong evidence of a relationship between self-efficacy and performance goals. Individuals with higher levels of self-efficacy set higher performance goals for themselves, and show greater commitment to those goals in the face of performance failure (Locke, Frederick, Lee, & Bobko, 1984; Taylor et al., 1984).

The importance of self-efficacy also has been demonstrated in a training context. Self-efficacy has had positive effects on performance and learning in such contexts as interpersonal skills (Gist, Stevens, & Bavetta, 1991), computer software (Gist, Schoerder, & Rosen, 1989; Martocchio & Webster, 1992), and military training (Tannenbaum et al., 1991). Further, recent studies also have shown significant relationships between self-efficacy and such measures of training effectiveness as
motivation to learn (Quiñones, 1995) and transfer of trained skills to the job (Ford, Quiñones, Sego, & Sorra, 1992).

Research suggests that individuals with high self-efficacy are more likely to participate in challenging assignments and assume greater responsibility for personal development than those with lower self-efficacy levels (Bandura, 1982; Bandura & Schunk, 1981). Additional studies have suggested that self-efficacy is related to individuals’ participation in employee development activities, including training programs, workshops, and job assignments. In a study of the factors that influence individuals’ voluntary participation in developmental activities, Noe and Wilk (1993) argued that self-efficacy would have a positive effect on participation in development activities, due to the positive relationship between self-efficacy and attitudes toward learning, perceptions of development needs, and perceptions of benefits resulting from participation in such activities. In other words, the authors proposed that individuals with higher levels of self-efficacy are more likely to have positive attitudes toward learning, a belief that there are benefits to be gained from participation in such activities, and a greater awareness of their specific development needs. The results of their survey indicated that self-efficacy did have a significant effect on self-report measures of participation in development activities, though self-efficacy was not related to any objective measures of development activity as measured by the organizations. Other research also has found a relationship between trainees’ self-efficacy levels and the extent to which training is perceived as useful on the job (Guthrie & Schwoerer, 1994).

It is proposed that individuals with higher levels of self-efficacy are more likely to report career advancement and skill maintenance as motives for attending training
programs. Individuals with high self-efficacy believe that they possess the ability, motivation, and control over the environment necessary to master trained material. Such individuals believe that they can effectively master training material, and they are likely to believe that successful performance in training is associated with greater career benefits as well. Thus, the following hypothesis is proposed:

Hypothesis 1: Pre-training self-efficacy will be positively related to career management and skill improvement motives.

Goal orientation. The role of individual differences and their influence on our understanding of training effectiveness have become the focus of increased research in recent years. In recent decades, such theories as goal-setting theory (Locke & Latham, 1990), control theory (Carver & Scheier, 1981; Lord & Maher, 1989), and social cognitive theory (Bandura, 1986) have focused much attention on the powerful effects that individual goals have on behavior and performance.

In recent years, researchers have demonstrated that the way individuals approach a task can affect their effort and behavior in achievement contexts. More specifically, many have argued that the educational and instructional research on goal orientation holds great promise for the study of training effectiveness (Farr & Middlebrooks, 1990; Farr, Hoffman, & Ringenback, 1993; Ford, Smith, Weissben, Gully, & Salas, 1998). Goal orientation refers to the goals that individuals bring to an achievement task. Two specific goal orientations have been identified: learning (or mastery) and performance (Dweck, 1986; 1989). These orientations represent different perceptions of what constitutes success as well as different reasons for task engagement (Ames, 1992).
Individuals with a strong learning orientation approach achievement tasks with the goal of increasing their competence; that is, they seek to gain mastery of the task at hand. In contrast, those individuals with a strong performance goal orientation are primarily concerned with demonstrating their competency by outperforming others, and seek to avoid unfavorable judgments of their competence (Dweck, 1986; Dweck & Leggett, 1988; Elliott & Dweck, 1988). Such conceptualizations of learning and performance goal orientations are essentially similar to discussions of ego vs. task-involved individuals, where task-involved individuals attempt to demonstrate ability by mastering tasks, and ego-involved individuals attempt to outperform their peers (see Nicholls, 1984).

The differences in learning and performance goal orientations are reflected by different motivational response patterns. More specifically, a learning goal orientation is characterized by a tendency to seek out challenges and persist in the face of obstacles. When individuals with a strong learning orientation are faced with failure on an achievement task, they typically rise to the challenge and interpret negative feedback as useful information, responding with greater effort and a solution-oriented approach (Dweck, 1986; Elliott & Dweck, 1988). Such individuals compare their performance to self-referenced standards for mastery, and focus on ways to develop new skills. They are willing to attempt new challenges, even if their ability estimates for a given task are low.

Individuals with a strong performance goal orientation, in contrast, are prone to a maladaptive response pattern. These individuals, who are actively concerned with avoiding negative judgments of their competence or ability, actively avoid the pursuit of challenges and believe that ability is demonstrated by succeeding with little
effort. They show little persistence in the face of obstacles, attribute failure to lack of ability, and may seek to either withhold effort or withdraw completely from activities that require persistence and continued effort for success (Ames, 1984; Dweck, 1986; Elliott & Dweck, 1985). Thus, individuals with strong performance goal orientations will seek tasks that they believe they can succeed at with little effort, and may even choose easy tasks, simply for the opportunity to appear competent.

Researchers have suggested that preferences for learning and performance goal orientations stem from individuals' implicit beliefs regarding the nature of ability. More specifically, it has been argued that some individuals believe that ability is a global trait that is fixed and uncontrollable. These individuals, who believe in ability as an entity, believe that competence cannot increase with effort or persistence. Increased effort at a given task is merely compensatory for a lack of ability, and failure is a clear sign of a lack of intelligence (Dweck & Leggett, 1988). Thus, a performance goal orientation is a reflection of the conception of ability as a fixed entity.

An alternative conception of ability focuses on intelligence as an internal and controllable trait that can be substantially modified through effort and experience (Dweck, 1986; Dweck & Leggett, 1988). Individuals who subscribe to an incrementalist view of ability believe that failure may be attributed to a lack of effort, or a low, though modifiable, level of capability. For incrementalists, the potential for capability is stressed over the current levels of capability. Thus, an incremental view of ability is often viewed as a precursor to a learning goal orientation.

Much of the research on goal orientation comes from educational and instructional literatures, and thus has been conducted primarily with children. While
researchers have noted the potential for the application of goal orientation to organizational research, appropriate questions have been raised regarding the extension of such research to adults. For example, some have argued that adult conceptions of intelligence are much more complex than are children's, and likely involve a blend of controllable and fixed elements. Further, adults are likely to encounter achievement tasks in a wide variety of domains, and may have different perceptions of the role of ability depending on the type of task and the surrounding environment (Kanfer, 1990b).

Recent research addressing this issue, however, suggests that adults do indeed hold distinct conceptions of ability as fixed or malleable. Button, Mathieu, and Zajac (1996) investigated the origins of learning and performance goal orientation. Over a series of three studies using undergraduate participants, they consistently found associations between an incrementalist/entity view of ability and a learning/performance goal orientation. Further support for the existence of an incrementalist/entity view of ability among adults may be found in a study of training effectiveness conducted by Martocchio (1994).

There also has been some debate regarding whether goal orientation is a situational or dispositional characteristic. Past research on goal orientation has been somewhat unclear as to whether goal orientation should be conceptualized and measured as a stable dispositional trait or a situational characteristic. Studies of goal orientation have operationalized the construct both as a dispositional and manipulated variable (Ames, 1984; Elliott & Dweck, 1988). Dweck's theoretical formulation of goal orientation suggests that implicit conceptions of ability lead to a dispositional orientation.
Recent research also suggests that goal orientation is a somewhat stable individual
difference variable, but somewhat amenable to situational influence (Button et al., 1996).

A final issue regarding the conceptualization of goal orientation pertains to its
dimensionality. Much of the research on goal orientation, including Dweck’s work
(1986; 1989; Elliott & Dweck. 1988), suggests somewhat implicitly that goal orientation
is a single continuum, with strong learning and performance goal orientations anchoring
each end. Others, however, have argued that the construct is multidimensional, and that
learning and performance goals are separate constructs (Farr et al., 1993). Button,
Mathieu, and Zajac (1996) examined the dimensionality of goal orientation over a series
of four studies. Confirmatory factor analysis revealed that in each study, learning goal
orientation and performance goal orientation emerged as separate and uncorrelated
constructs. Other empirical research also has confirmed the independence of the two
constructs (Ford et al. 1998). Thus, it appears that individuals can seek to simultaneously
improve their skills and prove their skills relative to others.

As noted above, individuals with strong learning and performance goal
orientation have different evaluative standards for performance. More specifically,
individuals with a strong learning goal orientation are more likely to perceive a
relationship between effort and performance, due to their implicit conceptions of ability
and their personal referent (Farr & Middlebrooks, 1990). In contrast, for those with a
strong performance goal orientation, effort is seen as compensatory for a lack of ability;
therefore, such individuals are less likely to perceive an instrumental relationship
between effort and successful task performance.
If individuals with strong performance goal orientations are less likely to perceive successful outcomes as stemming from their performance and less likely to perceive an instrumental link between effort and performance, it is argued that they are also less likely to view training as an opportunity to update job skills and maintain job security. That is, individuals with a strong performance goal orientation are argued to be unlikely to attend training programs with the motive of maintaining or updating career skills. Some have argued that individuals with a strong performance goal orientation are likely to interpret training assignments or opportunities as an indication that their performance is seen as substandard by management (Farr et al., 1993). This is consistent with Dweck's theoretical work, which suggests that performance goal-oriented individuals are primarily concerned with others' evaluation of their performance. If such individuals are given training opportunities or assigned to training programs, they are likely to interpret such cues as evidence of a negative evaluation by management. As such, they may be unlikely to report that their motive for attending training stems from a desire to update their skills. Instead, they are more likely to report a compliance motive.

In contrast to performance goal orientation, individuals with a strong learning goal orientation are likely to approach new tasks as a challenge and enjoy exerting effort in their attempts to master new tasks and skills. As such, learning goal-oriented individuals are likely to show greater interest in the task and greater enjoyment of the task itself (Dweck, 1986). In other words, individuals with a strong learning goal orientation are likely to have high intrinsic interest in training tasks.

In contrast, those with a strong performance goal orientation are likely to show little intrinsic interest or motivation. Their concerns over minimizing the effort displayed
toward a task, combined with their focus on outperforming others, may serve to overwhelm all intrinsic interest in the training task (Dweck, 1986; Elliott & Dweck, 1988). In fact, "performance goals may well create the very conditions that have been found to undermine intrinsic interest" (Dweck, 1986, p. 1042). Thus, individuals with strong performance goal orientations are unlikely to report intrinsic interest as a reason for their attendance at training programs.

Predictions regarding goal orientation and motives for attending training are stated explicitly in Hypotheses 2 through 4:

Hypothesis 2: Performance goal orientation will be negatively related to a skill improvement motive.

Hypothesis 3: Performance goal orientation will be positively related to a compliance motive.

Hypothesis 4: Learning goal orientation will be positively related to an intrinsic interest motive, and performance goal orientation will be negatively related to an intrinsic interest motive.

Career planning. In recent years, training researchers have begun to examine the role that career planning or exploration plays in training effectiveness (Noe, 1986; Noe & Wilk, 1993; Noe & Schmitt, 1986; Mathieu et al., 1992). Career exploration may be defined as an individual's assessment of skill strengths and weaknesses, career values and goals, interests, and the search for job-related information from others, including counselors, peers, and family (Mihal, Sorce, and Compte, 1984; Stumpf, Colarelli, & Hartman, 1983). Individuals who engage in a high degree of career exploration exhibit
behaviors designed to elicit information about themselves and their career environment, or to form decisions related to their career progress and/or adjustment.

Career exploration is typically considered to consist of four components: where one chooses to explore (environment vs. self), how one chooses to explore (random vs. systematic), how much one explores (frequency and amount of information), and what one explores (focus) (Stumpf et al., 1983). Measures of career exploration typically assess each of these components.

Research on career planning has demonstrated a relationship between exploratory behavior and such outcomes as occupational satisfaction (Greenhaus & Sklarew, 1981; Stumpf et al., 1983). Further, there is evidence that career exploration and career planning, considered to be a type of exploratory behavior, are related to participation in development activities (Noe, 1996; Noe & Wilk, 1993; Super & Hall, 1978). Noe (1986) suggested that individuals who engage in greater levels of exploratory behavior are more likely to have an accurate picture of their career strengths, weaknesses, and interests. Therefore, in a training context, he argued that those who engage in career planning would likely have higher motivation to learn in training programs that they consider to be congruent with their career goals. Such individuals have a desire to understand and improve their skill strengths and weaknesses, and thus are more likely to realize the potential benefits of training.

Empirical research on the importance of career planning in a training context is somewhat mixed. In an investigation of individuals' participation in firm development activities, Noe and Wilk (1993) found that individuals' self-reports of career exploration were related to self-reported participation in development activities. Similarly, Noe
(1996) found that the extent to which individuals explored their environment for career information (including investigating career opportunities, obtaining information on specific jobs or employers or the general labor market, and initiating career-related discussions with relevant individuals in career area) was related to individuals' participation in development activities and developmental behavior as reported by supervisors.

Other research has found less consistent results for career exploration and planning. Noe and Schmitt (1986) hypothesized that career exploration would have a significant effect on training motivation. Results of the study indicated a positive but nonsignificant correlation between career exploration and training motivation; however, the study's sample size consisted of 44 individuals and thus suffered from an obvious lack of statistical power. Mathieu et al. (1992) also failed to find a hypothesized positive relationship between career planning and training motivation. The researchers pointed out that the training course in their study was aimed at improving skills trainees performed in their current jobs, rather than imparting skills that individuals could use in future positions. Thus, they argued that trainees with strong career plans may not have perceived the training to be instrumental to their career goals and thus were not motivated to learn the material.

In summary, it appears that the relationship between career planning and trainee motivation is somewhat complex. Some researchers have suggested that trainees who engage in high levels of career exploration and planning may have higher motivation to attend training, but only to the extent that they perceive such training to be instrumental for advancing their career goals (Mathieu et al., 1992). Other research has shown a link
between career planning tendencies and participation in development activities (Noe & Wilk, 1993). It is argued in the present study that individuals who engage in career planning and exploration to high degrees are also likely to attend training for the purpose of advancing their career goals. That is, trainees who are career planners are likely to report that a key reason for their attendance at a training program is their desire to advance their career goals and maintain their career skills. Such individuals have an accurate sense of their skill strengths and weaknesses, as well as clear career goals, and thus are likely to attend training for the purpose of advancing such goals and building skills. This proposition is summarized in the following hypothesis:

Hypothesis 5: Career planning will be positively related to career management and skill improvement motives.

Tenure. As discussed previously, training often plays an important role in socializing employees (Wanous, 1980). For recent hires, as well as employees who begin new jobs or assume new responsibilities within the same organization, training programs offer not only information regarding how to perform job duties effectively, but also information regarding what their employer expects from them. For these individuals, training provides critical information about the organizations' norms, values, and practices (Feldman, 1989).

Thus, it is argued that employees who have recently joined an organization will be more likely to report that they are attending training for the purpose of socialization. More specifically.

Hypothesis 6: Organizational tenure will be inversely related to a performance standards motive.
Contextual Factors as Predictors of Reasons for Attending Training

Along with individual differences, there has been an increasing interest in recent years on the effect of contextual factors on training effectiveness. In the following section, I identify relevant contextual factors and review previous research regarding their likely influence on reasons for attending training.

Voluntary vs. mandatory attendance. The importance of whether an individual volunteers to attend training or is mandated to do so by an employer has received considerable research attention in recent years. Traditionally, researchers have argued that trainees who volunteer to attend training programs are more motivated to learn compared to individuals who are assigned to such programs. It is believed that such individuals must view the training as valuable in some sense, otherwise they would not volunteer.

Empirical research provides some support for this position; however, overall results are mixed. In a study of the effects of voluntary vs. mandatory participation on training outcomes, Hicks and Klimoski (1987) provided employees with information regarding an upcoming training workshop. In the low choice condition, the program information was presented in the form of a supervisory memo that instructed the individuals to attend. In the high choice condition, individuals were provided information on the training topic and the times it would be offered, but were not pressured in any way by supervisors to attend the workshop. Results showed that those who volunteered to attend training reported higher motivation to learn, performed better on post-training learning measures, and also reported greater satisfaction with the training course.
Other research has found similar results for reactions to training (Mathieu et al., 1992; Mathieu, Martineau, & Tannenbaum, 1993). However, while allowing individuals to volunteer for training may influence lead to positive reactions, voluntary participation may have other unintended consequences, which may be undesirable. For example, in a study of engineers, Baldwin and Magjuka (1991) found that individuals who viewed training as mandatory reported greater intentions to apply the skills learned in training to their jobs, compared to those whose attendance was voluntary.

Some researchers have attributed the discrepancy in these results to differences in training attitudes. Specifically, in the Baldwin and Magjuka (1991) study, over 80 percent of the participants reported that their previous training experiences with their employer had been somewhat or very favorable. Thus, Baldwin and Magjuka asserted that the designation of particular training courses as mandatory signified their importance to employees, and that the employees perceived such training to be valuable. In contrast, only 17 percent of the employees given a choice of whether or not to attend training actually did so in the Hicks and Klimoski (1987). perhaps suggesting that employees in that organization perceived training to be of little or no value. Therefore, the distinction afforded by a mandatory vs. voluntary designation may depend on whether employees see training as valuable (Tannenbaum & Yukl. 1992).

The relationship between mandatory vs. voluntary training attendance and training effectiveness is obviously complex. Research is needed to determine the conditions in which mandatory training may be viewed as more important than training which is open to all, and the effects of this distinction on such variables as trainee motivation to learn. In recent years, researchers have called for a more sensitive
treatment of the mandatory-voluntary distinction, suggesting that some interventions formally labeled as voluntary may be perceived by employees as implicitly mandatory, and vice-versa (Baldwin & Magjuka, 1997). These researchers have argued that it is important to consider the perceived status of training, as well as the formal designation, in training research. The examination of trainees’ reported reasons for attending training accomplishes this objective in part, by specifically asking trainees to report their purpose or motive for attending training programs.

Although the relationship between formal status and reasons for attending training is likely complex, it is possible to offer some initial hypotheses regarding the relationship between formal status and reasons for attending training. Specifically, those who are compelled to attend training by management are likely to report that their attendance is due to their desire to comply with management directive. Such individuals should be less likely to report that they are attending training because of intrinsic motivation in the topic.

In contrast, those who volunteer for training are likely to have specific reasons or motives behind their attendance. These individuals are likely to report that they are attending training because of an intrinsic interest in the course topic, or because they believe that the skills taught in training will help them develop their career skills and marketability. These propositions are summarized in the following hypothesis:

Hypothesis 7: Compared to those who are assigned to training, individuals who volunteer for training will be more likely to report intrinsic interest, career management, and skill improvement as reasons for training attendance, and will be less likely to report compliance as a reason for their attendance.
Organizational climate/managerial support. Recent research clearly suggests that trainees' perceptions of the favorability of their work environment can have important effects on their attitudes toward training and their participation in development activities. Elements of the work environment, including managerial support and climate, have been implicated by various researchers as having important effects on training participation and outcomes (Kozlowski & Hults, 1987; Noe, 1986; Mathieu et al., 1992; Mathieu et al., 1993; Tannenbaum & Yukl, 1992).

Recent studies of the pre-training environment have focused on the effects of managerial support, or the extent to which trainees perceive that their supervisors are committed to the training experience and support the transfer of trained skills to the job (Kozlowski & Hults, 1987; Noe & Wilk, 1993; Tesluk, Farr, Mathieu, & Vance, 1995). To the extent that managers communicate to their employees that they value training and provide them with opportunities to attend programs and apply trained skills, employees are likely to have more positive attitudes toward the instrumentality of training programs and to approach training with higher motivation to learn.

These propositions have received some empirical support. Trainees with more supportive supervisors have been found to approach training with stronger beliefs in the usefulness of such training (Cohen, 1990; Guthrie & Schwoerer, 1994). Further, trainees who reported greater support from managers and peers have been shown to report higher motivation to learn and greater participation in development activities (Noe & Wilk, 1993).

Managerial support may be considered one facet of overall perceptions of the work environment, or the organizational climate (Noe, 1986). Climate generally refers to
individuals' perceptions of the salient characteristics in their work environment, in contrast to the objective environmental characteristics (James & Jones, 1974; Schneider, 1990). Climate perceptions are argued to evolve as individuals interact with others in the work environment and attach meaning to elements of the work context, such as policies, reward systems, and managerial behavior. A distinction is made between individual perceptions of the work environment, termed psychological climate, and organizational climate. When individuals attach common patterns or meaning to major organizational characteristics, such perceptions are referred to as organizational climate (Joyce & Slocum, 1984).

Much of the research on organizational climate has attempted to relate broad measures of organizational climate to specific behavioral dependent variables. Such studies have typically found few significant results. Recent examinations of climate, however, have addressed this problem, understanding that climate is a multifaceted construct, and that the criterion of interest should determine the precise definition of the construct (Schneider, 1985).

Training researchers investigating organizational climate have thus typically defined climate in terms of updating and training transfer. In a study of engineers, Kozlowski and Hults (1987) examined the influence of technical updating climate, which was defined as one which encourages the maintenance of technical skills and has managers who encourage and support updating activities such as training. Their measure of updating climate included five specific updating dimensions: management policies, peer relations, job assignments, supervisor actions, and organizational orientation. Results of their study showed that individuals working for organizations with a positive
updating climate participated in more updating activities, including training courses, seminars, and other professional activities.

Rouillier and Goldstein (1993) examined the effects of transfer of training climate, defined as the "situations and consequences which either inhibit or help to facilitate the transfer of what has been learned in training into the job situation" (p. 379). The authors proposed that two dimensions form the transfer of training climate. Situational dimensions included goal cues, social cues, task and structural cues, self-control cues, while consequences included positive and negative feedback, punishment, and no feedback. These cues and consequences encourage or discourage employees from applying trained skills when they return to their job. Using a sample of graduates from a fast food manager training program, the authors found that transfer of training climate explained significant variance in transfer behavior beyond that of unit performance and learning. Similar results have been reported by Tracey, Tannenbaum, and Kavanagh (1995), who found that supermarket managers working in departments with more positive training transfer climates exhibited greater increases in performance after attending training on basic supervisory skills.

The research described above suggests that those individuals who work in environments that encourage them to update their skills and take advantage of training opportunities are more likely to transfer trained skills back to the job. The evidence is less clear as to how climate specifically affects such training outcomes. It has been suggested that climate affects transfer through its influence on trainee characteristics, including attitudes about the instrumentality of training and motivation to learn training material (Noe & Wilk, 1993; Quiñones, 1997). Research suggests that trainees who
perceive a greater number of situational constraints to their ability to apply trained skills are less motivated to learn (Mathieu et al., 1992). Overall, however, research is needed to identify the specific mechanisms by which updating and transfer climate affect the training experience.

One such mechanism may be reasons for attending training. Individuals who perceive a supportive updating and transfer climate may have different reasons or motives for attending training, compared to those who work in less supportive environments. More specifically, if an individual perceives a supportive work environment where the updating of skills is encouraged and the application of such skills to the job is allowed, that individual is more likely to attend training for the purpose of improving career-related skills. In comparison, an individual who works in an environment where management is not supportive of training, and employees are not given the opportunity to apply trained skills to their jobs is given the message that training is not valued by the organization. Consequently, that individual is not likely to report a desire to improve job skills as a primary reason for attending a particular training program. This proposition is summarized in the following hypothesis.

Hypothesis 8: There will be a direct relationship between organizational climate and career management and skill improvement motives for attending training.

Reasons for Attending Training and Indicators of Training Effectiveness

In the following sections, I review previous research examining training effectiveness, focusing on research investigating motivation to learn and reactions to training. I propose several linkages between individuals' reasons for attending training and motivation to learn. Finally, the overall conceptual model is presented.
Trainee motivation to learn. As described above, individual attendance at training programs likely is motivated by various factors. It is argued here that these factors, or reasons for attending training, may have important implications for our understanding of training effectiveness. More specifically, individuals' reasons for attending training programs are likely to have effects on their motivation to learn the material being presented.

Training is a planned experience designed with the goal of fostering permanent change in individuals' knowledge, attitudes, or skills (Goldstein, 1993). As such, a traditional focus of research on training has been the ability of training participants. However, recent decades have been marked by a realization that ability alone cannot predict the wide range of individual differences in the amount of material that trainees learn and the reactions that they have to training programs.

In keeping with this perspective, Noe (1986) proposed that several variables other than trainee ability might have considerable influences on training effectiveness. The concept of trainability reflects this view. Trainability, or individuals' capacity for mastering training material, is viewed as a function of such factors as ability and motivation (Noe, 1986; Wexley & Latham, 1981). Thus, while cognitive ability has been shown to be an important aspect that determines an individual's capacity for acquiring new skills and knowledge (Ree & Earles, 1991), individual characteristics such as motivation play a large role as well.

Noe (1986) proposed a model linking individual characteristics to motivation to learn. Specifically, he proposed that locus of control, career involvement, job attitudes, and training expectancies would be related to motivation to learn. Noe and Schmitt
(1986) provided a partial test of this model by examining the influence of locus of control, expectancies, and career attitudes such as job involvement and career exploration on pre-training motivation. Results of the study provided little support for the hypotheses that locus of control, career planning, and career exploration would relate to pre-training motivation. Further, there was little evidence to support the proposed relationship between pre-training motivation and various training outcomes. In all, results did not seem to support the propositions regarding trainee motivation, but the generalizability of the study is limited due to small sample size.

Other studies have supported the argument that trainee motivation is a significant influence on measures of training effectiveness. Several studies examining the effects of allowing trainees to choose the content of training programs have found relationships between pre-training motivation and learning (Baldwin, Magjuka, & Loher, 1991; Hicks & Klimoski, 1987). For example, in a survey of Naval recruits, Tannenbaum et al. (1991) found that higher levels of reported pre-training motivation predicted posttraining commitment, physical self-efficacy, and academic self-efficacy. Similarly, Mathieu et al. (1992) found evidence of a weak relationship between pre-training motivation and learning in a proofreading course. Quiñones (1995) found that pre-training motivation predicted both posttraining knowledge and actual behavior during training.

Several studies of trainee motivation also have examined the influence of various characteristics, including individual differences and contextual factors, on trainees' motivation to learn (Baldwin et al., 1991; Noe, 1986; Noe & Schmitt, 1986; Mathieu et al., 1992; Quiñones, 1995). Results suggest that individual differences such as self-efficacy and contextual factors such as managerial support, job involvement, situational
constraints. and realistic job previews have significant effects on pre-training motivation (Baldwin et al., 1991; Hicks & Klimoski, 1987; Mathieu et al., 1992; Noe & Schmitt, 1986; Noe & Wilk, 1993; Quiñones, 1995).

When reviewing previous research on trainee motivation to learn, it becomes clear that studies of training effectiveness have conceptualized and measured trainee motivation in different ways, which are qualitatively and conceptually distinct (Mathieu & Martineau, 1997). Most training studies have measured trainee motivation using scales that assess the extent to which trainees report willingness to expend effort to learn skills, desire to increase performance/knowledge, and motivation to pay attention to the skills/material being presented (Baldwin et al., 1991; Hicks & Klimoski, 1987; Noe & Schmitt, 1986; Noe & Wilk, 1993; Quiñones, 1993; Ryman & Biersner, 1975). Alternatively, some recent studies have measured motivation to learn using an expectancy theory framework (see Baldwin & Magjuka, 1997; Mathieu et al., 1990; Tannenbaum et al., 1991). These authors have measured trainee motivation by assessing the extent to which trainees perceive a relationship between success in training and future job performance.

It is likely that these two approaches to the measurement of training motivation in fact measure distinct motives. That is, trainees may be motivated to actually learn training material, as is indicated by self-reports of intent to learn and willingness to expend effort to learn new skills or material. As discussed in the framework of the current study, such motivation may be driven by various factors, including but not limited to the perception that acquisition of training knowledge offers some career benefit.
Although there has been no empirical examination of the reasons behind training attendance, many researchers implicitly recognize that trainees approach the training environment with different goals, expectations, and motives (Baldwin & Magjuka, 1997; Farr & Middlebrooks, 1990; Hoiberg & Berry, 1978; Noe, 1986; Nordhaug, 1989). For example, Noe (1986) suggested that "trainees have preferences among the various outcomes (e.g., promotion, recognition) resulting from participation in the program" (p. 740). Similarly, researchers utilizing the expectancy theory framework of trainee motivation make the implicit assumption that trainees perceive training opportunities quite differently depending on their individual needs (see Farr & Middlebrooks, 1990; Mathieu, Tannenbaum, & Salas, 1992; Tannenbaum et al., 1991).

This study explicitly examines that relationship by considering how individual differences and contextual characteristics influence trainees' motivation. More specifically, it is argued that individuals who attend training for different reasons are likely to have different levels of pre-training motivation to learn (measured as their willingness to learn training material).

It is hypothesized that individuals who attend training due to a greater intrinsic interest in the course topic will likely report higher pre-training motivation as well. Individuals with high levels of intrinsic motivation or interest in a task are more willing to expend effort to learn a task or skill, even in the absence of external rewards or contingencies (Deci & Ryan, 1980; Daniel & Esser, 1980). In fact, increasing intrinsic interest in a training topic is often stated by training researchers as a prescription for increasing trainee motivation (Farr & Middlebrooks, 1990).
With regard to a skill improvement motive, it is argued that those individuals who attend training in order to maintain and update their job skills will be highly motivated to expend the effort necessary to master training program content. If an individual attends training due to a need to improve skills and maintain job security, that individual should be highly motivated to learn the skills being taught in the program. Thus, a positive relationship between a skill improvement motive and trainee motivation is hypothesized.

In contrast, individuals who attend training with a career management motive, while motivated to attend training, may be less interested in actually mastering training program content. It is argued that for these individuals, mere attendance at training programs has significant value, regardless of what skills are actually acquired. Attendance at training programs may be an explicit or implicit requirement for promotion and advancement within the company. Thus, individuals who attend training for this reason are fulfilling their need simply by attending the training program; however, it is unclear whether or not they are motivated to attempt to learn the skills being taught in the program. Thus, it is hypothesized that there will be a negative relationship between a career management motive and trainee motivation. The more likely an individual is to report career management as a motive for attending training, the less likely it is that that individual is highly motivated to learn the program content.

Perhaps the most common reason individuals will report for attending training is a compliance motive. I argue, however, that attending training in order to comply with indirect pressure or direct orders is not a compelling motivating force. In other words, though most individuals attend training because they have been directed to do so, they are likely to have little motivation to learn training material. Such individuals are likely to
have little intrinsic motivation for skill acquisition, because their attendance is not of their own accord. Thus, a negative relationship between a compliance motive and trainee motivation is hypothesized.

It is argued that a performance standards motive will be positively related to motivation to learn. Individuals who attend training for socialization purposes have a desire to learn about job duties, standards of performance, and organizational expectations and norms. Thus, they are likely to be attentive to training program content and motivated to expend the necessary effort to acquire new skills. Therefore, I hypothesize a positive relationship between a performance standards motive and trainee motivation.

Finally, it has been argued that many individuals attend training due to an entitlement motive. That is, they may attend training because they feel they are entitled to do so, because they feel it is an important benefit or opportunity to be taken advantage of, or perhaps because they have been promised the opportunity to attend training programs. It is unclear what the effects of an entitlement motive on trainee motivation might be. Individuals who perceive training as a reward or benefit offered by the organization are likely to view that training as valuable. In other words, if individuals see training as something that they have been promised, or something that they deserve, then such individuals are likely to believe that training has something important to offer them. Thus, individuals are likely to exhibit greater motivation to learn the material offered in training.

In summary, individuals' reasons for attending training programs may have important effects on their motivation to learn. The following hypothesis is proposed:
Hypothesis 9: There will be a positive relationship between trainee motivation to learn and intrinsic interest, skill improvement, performance standards, and entitlement reasons for attending training. There will be a negative relationship between trainee motivation to learn and compliance and career management reasons for attending training.

Reactions to training. Traditionally, the effects of training have been evaluated using four criteria: reactions, learning, behavior, and results. These criteria have been based on a framework advanced by Kirkpatrick (1959; 1960). This taxonomy of training evaluation criteria is widely used, though questions have been raised regarding the usefulness and appropriateness of the model (Alliger & Janak, 1989; Holton, 1996). In general, however, the structure of the framework has been supported (Alliger & Janak, 1989).

In a recent study of training evaluation criteria, Alliger, Tannenbaum, Bennett, Traver, and Shotland (1997) conducted a meta-analysis of 34 training studies and examined the relationships among various criteria. Consistent with others who have called for a more complex treatment of reaction criteria (see Alliger & Janak, 1989; Tannenbaum & Yukl, 1992), they proposed that reactions may be divided into two types: affective and utility. Affective reactions include those emotional opinions traditionally associated with reaction criteria. Such reaction measures include items asking trainees to what extent they liked and enjoyed the training program. In contrast, utility reaction measures specifically ask trainees about the extent to which they feel training is useful and transferable to their job.
Results of the meta-analysis indicated that utility judgments were more strongly related to learning and skill transfer than were affective reaction measures. Further, utility judgments exhibited stronger correlations with training transfer than learning measures did. The authors suggested that when providing utility reactions, trainees implicitly consider the extent to which their work environment will permit them to utilize skills learned in training.

Previous research on reactions to training suggests that trainee motivation may have significant effects on individuals’ training reactions. Mathieu et al. (1992) found that individuals with higher pre-training motivation had more positive reactions to a training program designed to improve proofreading skills. Similarly, Quiñones (1995) found that trainee motivation was positively related to trainee affective reactions. Both studies contained both affective and utility reaction items. Similarly, in this study it is hypothesized that:

Hypothesis 10: Trainee motivation will be positively related to trainee reactions.

Learning. Along with trainee reactions, learning has long been considered a criteria for training evaluation. Measures of learning typically include measures of content knowledge collected immediately following training (Alliger et al., 1997); however, learning measures may also include measures of knowledge retention collected some time after training and measures of behavior and/or skill demonstration collected within the training environment.

Previous research suggests that motivation to learn may have significant effects on learning (Baldwin et al., 1991; Quiñones, 1995; Tannenbaum et al., 1991). Results of several studies suggests that individuals who approach training with higher levels of
motivation also perform better on post-training learning measures. Similarly, in this study it is hypothesized that:

Hypothesis 11: Trainee motivation will be positively related to actual learning.

Conceptual Model

Figure 1 presents the conceptual model developed for this study. As shown in the figure and discussed in previous sections, individual differences and contextual factors are hypothesized to influence individuals’ reasons for attending training. More specifically, self-efficacy, goal orientation, career planning, tenure, voluntary/mandatory attendance, and updating climate are predicted to have effects on motives for attending training. Further, these motives are hypothesized to influence trainees’ motivation for learning training material. Finally, motivation to learn is hypothesized to have effects on learning as well as reactions to training. In general, the model focuses on a detailed analysis of the pre-training environment and trainees’ pre-training motives and needs, an analysis which has been called for by training researchers, but which has not been conducted to this point (Baldwin & Magjuka, 1997; Feldman, 1989; Mathieu & Martineau, 1997).
<table>
<thead>
<tr>
<th>ANTECEDENTS</th>
<th>REASONS FOR ATTENDING TRAINING</th>
<th>PRE-TRAINING</th>
<th>POST-TRAINING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Differences</td>
<td></td>
<td>Compliance</td>
<td>Reactions</td>
</tr>
<tr>
<td></td>
<td>• Self-Efficacy</td>
<td>• Career Management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Goal Orientation</td>
<td>• Skill Improvement</td>
<td>Motivation to Learn</td>
</tr>
<tr>
<td></td>
<td>• Career Planning</td>
<td>• Intrinsic Interest</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Tenure</td>
<td>• Performance Standards</td>
<td></td>
</tr>
<tr>
<td>Contextual Factors</td>
<td></td>
<td>• Entitlement</td>
<td>Learning</td>
</tr>
<tr>
<td></td>
<td>• Voluntary/Mandatory</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Attendance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Organizational Climate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 1. Conceptual Model
Method

Participants

One hundred seventeen teachers (95 females, 19 males) from the Houston Independent School District (HISD) and eight surrounding districts served as participants in this study. Participants attended one of five summer development programs designed to improve teachers' skills in teaching mathematics. Participants taught all grade levels from kindergarten through high school math. Seventy-one schools were represented. All attendees participated in the study. Participants' age ranged from 21 to 58 years old. Seventy-four of the participants were Caucasian, 18 were Black, 15 were Hispanic. 3 were Asian, 2 were Native American, and 1 individual reported his/her race as Other. Years of teaching experience ranged from zero to 30 years.

Training Program

The training program examined in this study was the Rice University School Mathematics (RUSMP) Summer Program. The Summer Program is part of the overall RUSMP project, sponsored by Rice University and various grants. RUSMP was established in 1987 with monies provided by Rice University and a grant from the National Science Foundation. The project is designed to improve the content knowledge of mathematics teachers at all grade levels, promote the use of current instructional practices and philosophies as suggested by national standards, and increase the level of professionalism among teachers through the achievement of the above goals.

The Summer Program is designed to meet these goals. Conducted annually since 1987, the Summer Program provides participating teachers with exposure to mathematics content at and above the grade level at which they teach. Further, participants receive
instruction on new approaches to teaching math, in accordance with standards published by the National Council of Teachers of Mathematics (NCTM). Along with instruction on mathematical content, individuals participate in various activities during the program designed to demonstrate improved methods and styles of teaching, including group-based activities, tools and aids, and technology appropriate for the classroom. Further, mathematics educators give weekly colloquia on issues in mathematics and general instruction. Participants also are given several opportunities throughout the program to collaborate with their peers, reflect on their teaching styles, and plan instructional activities for use during the school year.

**Procedure**

Participants were mailed a pre-training questionnaire 3 weeks before the beginning of the Summer Program. Participants were instructed to complete the questionnaire and bring it with them to the program. The questionnaire instructions included a brief description of the purpose of the questionnaire, as well as instructions for its completion (See Appendix A for pre-program questionnaire instructions). Participants were told that the purpose of the survey was to gather background information on program participants, and to gain a better understanding of participants' needs and expectations. The pre-training questionnaire included the self-efficacy, goal orientation, career planning, training utility, motivation to learn, beliefs about teaching philosophy (learning), and reasons for attending training measures.

At the conclusion of the program, participants completed a post-program survey. This survey contained the transfer climate, training reactions, and beliefs about teaching philosophy measures. In addition to these surveys, participants also completed a test of
content knowledge at both the beginning and end of the program, which served as an additional learning measure.

**Measures**

The following measures were collected as part of the present study. Unless otherwise specified, all measures were based on a 7-point Likert scale. Participants were asked to indicate their level of agreement with various statements, with a response of "1" indicating strong disagreement and "7" indicating strong agreement with a given statement. Items were phrased both positively and negatively, and reverse-scored later where appropriate. Unless otherwise noted, scales were created by summing and averaging the items, for interpretation consistent with the 7-point scale.

With the exception of the motivation to learn and self-efficacy scales, which were presented in a mixed format, items from each scale were presented together with brief reminder instructions regarding completion of the items. The appendices containing the individual scales also contain the instructions presented with that particular scale.

When adapted from existing published measures, many of the items were modified slightly from their original form in order to be consistent with the nature of the training task and the participants' occupation. All measures were reviewed and revised as appropriate by the director of research for RUSMP and the director of the Summer Program. Due to time and space limitations and the desire to keep both questionnaires brief, abbreviated versions of several measures were used. All such abbreviations are noted in the following sections.

**Pre-training self-efficacy.** Self-efficacy levels were assessed by 5 items contained in the pre-program questionnaire (see Appendix B). These items were adapted from a
10-item measure used successfully in previous training studies (Quiñones, 1995; Nease, Mudgett, & Quiñones, in press). Due to constraints on the number of items that could be included as part of the questionnaire, 5 items were selected as representative of the 10-item scale. The items assessed trainees' perceptions of the extent to which they believe they will be able to successfully perform the skills taught in the training program. Coefficient alpha for the scale was .78.

**Goal orientation.** Participants' goal orientation was assessed by a measure adapted from Button et al. (1996). The measure contains 16 items assessing learning and performance goal orientation (8 items for each dimension). This measure of goal orientation was created specifically for the adult population. Analyses of four studies summarized in Button et al. (1996) provide support for the construct validity and reliability of the measure (see Appendix C). As expected, a principal components factor analysis revealed two factors; coefficient alpha was .88 and .83 for the learning and performance goal orientation scales, respectively.

**Career planning.** Individual levels of career planning were assessed with a 7-item scale adapted from Gould (1979). The items addressed the extent to which individuals believe that they have career plans, the clarity of such plans, and the existence of personal strategies for achieving career goals (see Appendix D). This measure of career planning has been used in other empirical training studies, suggesting that the measure possesses adequate reliability and discriminant validity (Mathieu et al., 1992; Noe & Schmitt, 1986). Coefficient alpha for the scale was .87.

**Training utility.** Participants' overall attitude toward the usefulness of training programs was assessed with a 5-item measure (see Appendix E for the measure). The
items assessed the extent to which individuals have had positive experiences with training and professional development programs in the past. The measure was adapted from Ford and Noe (1987) and Guthrie and Schwoerer (1994). Examination of the items and a principal components factor analysis led to the deletion of one item, leaving a 4-item scale with a coefficient alpha of .88.

Reasons for attending training. Participants' reported reasons for attending training were assessed in two ways. First, reported reasons were assessed in the pre-training questionnaire with a 29-item scale. The individual items reflect the hypothesized categories of reasons for attending training, with 4-6 items for each category. Second, participants were asked to describe their motives and reasons for attending the training program, using an open-ended format. Their written responses were then coded for content. Third, participants were given a list of six possible reasons or motives for attending training (1-2 sentences each) and asked to rank order their top two reasons for attending training, choosing from that list. The six choices were created as summaries of the six hypothesized categories. All measures may be found in Appendix F.

The 29 items regarding participants' reasons for attending training were subjected to a principal components factor analysis with varimax rotation, in order to determine independent dimensions of training motives. The factor analysis identified eight factors with eigenvalues greater than one. Closer examination of the factors and the scree plot revealed that the first five factors all had eigenvalues greater than 1.5, and together accounted for approximately 59 percent of the variance. The eigenvalues were 7.12, 4.65, 2.01, 1.84, and 1.58, for Factors 1 through 5, respectively. The remaining three
factors consisted of one to two items each. Thus, five factors were retained for further analyses.

Table 1 depicts the five dimensions, including the selected items and factor loadings. Items with factor loadings above .40 on a single factor were considered. The first factor consisted of eight items. Items on this factor pertained to individuals' impression that participation in the program was either implicitly or explicitly required in order to keep their job or receive pay increases. The items were summed and averaged to form a scale labeled Compliance, and coefficient alpha for the scale was .90.

Four items comprised the second factor. This dimension was represented by items regarding participants' personal interest in the topic and feeling that the program would be a fun experience. The items were combined to form a scale labeled Intrinsic Interest; coefficient alpha for the scale was .81.

The third factor contained items regarding participants' perception that the program would provide them with information regarding the expectations and standards of their school. The three items loading on this factor each pertained to the extent to which participants felt they would learn about how they were expected to teach. As such, the scale constructed from these items was labeled Performance Standards. Coefficient alpha for this scale was .87.

Four items loaded on the fourth factor. Three of these items measured the extent to which participants felt that their attendance at the program would lead to valued career outcomes, such as a positive impression or graduate credit. The fourth item measured the extent to which participants reported attending because it was a job benefit. Analysis of the items revealed that coefficient alpha for all four items was .72; however, if the fourth
Table 1

Reasons for Attendance: Dimensions and Factor Loadings

Factor: Generalized Compliance

<table>
<thead>
<tr>
<th>Reason</th>
<th>Factor Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>If I want to receive a salary increase, it’s necessary to attend this program</td>
<td>.71</td>
</tr>
<tr>
<td>It’s an implicit requirement for my job</td>
<td>.69</td>
</tr>
<tr>
<td>I have been told that I need to improve my skills in this area</td>
<td>.60</td>
</tr>
<tr>
<td>Attendance at this program is necessary to advance and/or receive pay raises in this district/school</td>
<td>.84</td>
</tr>
<tr>
<td>Mastery of things taught in the course is necessary to keep my position</td>
<td>.79</td>
</tr>
<tr>
<td>Attending this program is like getting my ticket stamped—I need to have it on my record if I hope to receive pay increases or greater responsibility</td>
<td>.79</td>
</tr>
<tr>
<td>It fulfills an explicit requirement for my job</td>
<td>.70</td>
</tr>
<tr>
<td>By doing so, I am complying with school/district administration orders</td>
<td>.70</td>
</tr>
</tbody>
</table>

Factor: Intrinsic Interest

<table>
<thead>
<tr>
<th>Reason</th>
<th>Factor Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personally, I find the curriculum of the program interesting</td>
<td>.81</td>
</tr>
<tr>
<td>I think the curriculum will be enjoyable</td>
<td>.84</td>
</tr>
<tr>
<td>It will be fun to learn the program curriculum</td>
<td>.72</td>
</tr>
<tr>
<td>I think it’s important to develop the kind of skills that will be taught this summer</td>
<td>.54</td>
</tr>
</tbody>
</table>
## Factor: Performance Standards

- It will help me to learn about my school/district’s expectations and standards: 0.85
- It will help me learn what the school/district expects of me in terms of how to perform my job: 0.80
- It will be useful for understanding how my school/district administration expects me to teach: 0.75

## Factor: Career Management

- Attending this program looks good on my record: 0.85
- I can receive graduate credit for attending: 0.76
- Attending this summer course will make a good impression on the school/district: 0.59
- Programs such as these are a benefit associated with my job (item deleted from final scale): 0.51

## Factor: Skill Improvement

- It will help me to learn how to teach more effectively: 0.75
- I think it will be an interesting challenge to learn the things taught in this program: 0.71
- The skills taught in this program will help me stay up-to-date in my field: 0.69
- It is a benefit offered by my school/district, and I decided to take advantage of it (item deleted from final scale): 0.42
item were eliminated. Coefficient alpha would improve to .75. The item in question was dropped, leaving a 3-item scale with an alpha of .75.

The fifth factor consisted of four items, three of which measured the extent to which participants reported attending the training in order to learn new skills and remain current in their field. The fourth item pertained to participants’ perception that the program was a benefit of their job. Examination of the items revealed that coefficient alpha could be improved from .60 to .72 with the deletion of the fourth item. The item in question was dropped, leaving a 3-item scale with a coefficient alpha of .72. The scale was labeled Skill Improvement.

**Motivation to learn.** Participants’ motivation to learn was assessed with a 6-item scale. The items were adapted from a larger set of items used successfully in previous training studies (Noe & Schmitt, 1986; Quiñones, 1995). The items assessed the extent to which program participants report motivation to pay attention to the training program and exert effort to learn the skills taught in the program (see Appendix G for a copy of the motivation to learn measure). Based on item analyses and a principal components factor analysis on all items, one item was dropped, leaving a 5-item scale with a coefficient alpha of .84.

**Transfer climate.** Perceptions of transfer climate were assessed at the conclusion of the training program with a 20-item measure. The items for this measure were created specifically for this study. A review of previous studies of training transfer and updating climate (Kozlowski & Hults, 1987; Rouillier & Goldstein, 1993; Tracey et al., 1995) indicated that researchers typically have either created climate measures specifically for individual studies, or have adapted previous measures to fit their study. To create a
measure of transfer climate appropriate for a sample of teachers, I adapted the conceptual model advocated by Rouilliard and Goldstein (1993). In that study, climate items were created based on a model of behavior modification (see Luthans & Kreitner, 1985) that outlines two major categories and eight dimensions of behavior modification.

The conceptual framework consists of two major categories, situational cues and consequences. Thus, situational cues and consequences both influence the extent to which individuals transfer trained knowledge to the job. Within these two categories are seven subdimensions. Dimensions of situational cues include goal cues, social cues, and task cues. The consequences category consists of positive feedback, negative feedback, punishment, and no feedback. Each dimension describes specific elements of the environment that either inhibit or promote transfer and use of trained skills on the job. Definitions of the seven subdimensions are provided in Table 2.

Previous studies have adapted the conceptual dimensions and tailored items for each (Tracey et al., 1995). Similarly, for the present study, 3 items were created for each of the seven subdimensions, with the exception of the punishment dimension, which had two items. Thus, the total number of items was twenty. All items were reviewed and edited by two directors of the RUSMP program, who each had considerable teaching experience (see Appendix H for the complete measure).

A principal components factor analysis was performed on the twenty items. The analysis revealed four factors with eigenvalues greater than 1.00, which together accounted for approximately 64% of the variance. The eigenvalues were 7.37, 2.78, 1.56, and 1.13 for Factors 1 through 4, respectively. Table 3 shows the selected items comprising each factor along with factor loadings.
Table 2

**Definitions of Transfer Climate Dimensions**

**Situational Cues**

<table>
<thead>
<tr>
<th>Goal Cues:</th>
<th>Cues that remind trainees to utilize their skills when they return to the job</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Cues:</td>
<td>Behavior and influence processes exhibited by members of surrounding groups (ex. peers) (some items reverse-scored)</td>
</tr>
<tr>
<td>Task Cues:</td>
<td>Cues present in the design and nature of one’s job (ex. necessary equipment is available)</td>
</tr>
</tbody>
</table>

**Consequences**

<table>
<thead>
<tr>
<th>Positive Feedback:</th>
<th>Trainees are given positive information regarding their use of trained behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Feedback:</td>
<td>Trainees are informed of the negative results and consequences of not utilizing trained behavior</td>
</tr>
<tr>
<td>Punishment:</td>
<td>Trainees are punished for utilizing trained skills (reverse-scored)</td>
</tr>
<tr>
<td>No Feedback:</td>
<td>Trainees are not given any information regarding the use or importance of skills learned in training (reverse-scored)</td>
</tr>
</tbody>
</table>
Table 3

Transfer Climate: Dimensions and Factor Loadings

Factor: Social Influence

- Teachers face pressure from peers to continue teaching using traditional styles and methods (reverse-scored) .83
- Individual teachers who try new teaching strategies in the classroom are looked down upon by their colleagues and superiors (reverse-scored) .82
- Teachers and colleagues do not understand or approve of new ways and styles of teaching (reverse-scored) .66
- There is a supportive environment for adopting new approaches to teaching mathematics .66
- There are usually negative consequences when teachers use what they have learned in professional development programs in their classrooms (reverse-scored) .65
- The nature of my job will not allow me to implement the strategies I have learned in this program (reverse-scored) .55

Factor: Recognition

- There are clear rewards for implementing skills learned in professional development programs in the classroom .83
- If I implement the strategies I have learned this summer in my classroom, I will be recognized for my efforts .74
- Teachers are rewarded for applying the skills they learn in professional development programs to the classroom .73
- The administration is too busy to follow up and/or notice whether I use the strategies I have learned in this program (reverse-scored) .59
- No one notices whether teachers apply what they learn in professional development programs in their classrooms (reverse-scored) .56

- In the future, I will probably receive information from the administrator of my school about the importance of applying the skills I learned in this program to the classroom .56

Factor: Environment

- The administration sets goals and/or standards that encourage teachers to apply skills they've learned in professional development programs in their classrooms .76

- Teachers are encouraged to make a sincere effort to apply what they learn in professional development programs in the classroom .76

- The structure and demands of teaching in our school allow teachers to use the skills they learn in professional development programs .68

- Teachers are reminded of the importance of applying new teaching methods in the classroom .59

- Where necessary, tools and aids are available for teachers to use in implementing new teaching skills and strategies .55

Factor: Sanctions

- If teachers fail to apply what they have learned in professional development programs in their classrooms, they are disciplined .88

- Teachers face negative consequences if they do not apply the knowledge and skills learned in training and development programs in their classrooms .86

- When teachers don't properly adjust their teaching style to incorporate the skills they learn in professional development programs, their colleagues notice and encourage them to do so (item deleted from final scale) .50
The first factor consisted of six items. The three items designed to measure social cues loaded on this factor, as did the three items designed to measure punishment. This dimension appeared to assess the extent to which participants felt that surrounding groups (such as peers and superiors) had an impact on their use of trained skills. Thus, this factor was labeled Social Influence. One item contained in the scale also had a factor loading exceeding .40 on the third factor; however, it was retained as part of the Social Influence dimension. The six items were summed and averaged to form a scale; coefficient alpha was .83.

Six items loaded on the second factor. The three items constructed to assess the level of positive feedback that individuals received all loaded on this factor, as well as the three items designed to assess the extent to which participants receive no feedback. This factor assessed the extent to which participants felt that individuals receive recognition and attention for utilization of trained skills. One item also had a factor loading on the Social Influence factor exceeding .40 but was retained. The scale created from the six items was labeled Recognition. Coefficient alpha for the Recognition scale was .84.

The third factor consisted of five items, three of which were intended to measure goal cues and two of which were designed to measure task cues. This dimension appeared to assess the extent to which participants felt that their work environment supported the transfer of trained skills to the job. Both elements of the physical environment and existing standards of behavior were included in this dimension. It should be noted that four of the five items contained in this factor also had loadings exceeding .40 on other factors. Three items also loaded on the Social Influence dimension and one item also loaded on the Recognition. Based on ease of interpretation
and a coefficient alpha of .84, however, the items were retained and combined to form a scale labeled Environment.

The fourth factor consisted of the three items designed to measure the level of negative feedback that participants receive if they do not utilize trained skills. One of the three items also had a factor loading of .50 on the Recognition factor, and a reliability analysis of the three items indicated that coefficient alpha could be improved with the deletion of that particular item. Thus, the item was dropped, leaving a 2-item scale with a coefficient alpha of .80. This scale was labeled Sanctions.

Following the identification of appropriate dimensions of climate, the next step in the construction of climate scores involved defining the appropriate level at which climate exists. More specifically, previous theory and research on transfer climate has identified three criteria to be used in the evaluation of the appropriate level of aggregation for climate scores: (a) consensus, or the extent to which climate perceptions are shared within levels of aggregation; (b) discrimination, or demonstrable differences between perceptions of climate at different levels of aggregation; and (c) predictability, or the extent to which climate scores at different levels of aggregation have predictable relationships with organizational or individual criteria (James & Slocum, 1984; Kozlowski & Hults, 1987; Tracey, Tannenbaum, & Kavanaugh, 1995). In this study, for the purposes of this study, participants' school and district were considered as two possible appropriate levels of aggregation; however, teachers from HISD (45 total) also are members of subdistricts within HISD, thus creating a third possible level of aggregation. Eight of these subdistricts were represented in the program. Thus, three
levels of aggregation were considered: school, district including HISD subdistricts, and district with HISD combined.

Calculated school level scores for each climate dimension were based on the average score for each school that had at least two attendees. The index was calculated for 33 of the 71 schools. Calculated district level scores for each climate dimension were based on the average score for each of the districts. Average district scores were calculated for six of the eight districts other than HISD (the remaining districts had only one representative). Average district scores also were calculated for HISD as a single district (45 attendees) and at the subdistrict level for seven of the eight subdistricts with at least two representatives (ranging from 4 to 14 representatives).

With regard to the consensus criterion, it was expected that individuals in the same organization should be exposed to similar events and messages and thus would share perceptions of the organizational context with others. If consensual perceptions do not exist, then transfer climate may not be considered an organizational attribute. James, Demaree, and Wolf (1984) have developed an index of interrater agreement, $r_{wg(i)}$, which may be used to assess the extent to which individuals share perceptions about transfer climate. The index is considered appropriate for multiple items that are essentially parallel indicators of a construct and is interpreted as a Pearson product-moment correlation. Other common estimators of interrater agreement have demonstrated severe attenuation when restriction of range exists with regard to item responses, thus $r_{wg(i)}$ is typically used in empirical studies of climate (Kozlowski & Hults, 1987; Tracey et al., 1995; Rouillier & Goldstein, 1993).
The index was calculated for each of the four climate dimensions (Social Influence, Recognition, Environment, and Sanctions) across school ($N = 33$) and district ($N = 14$) levels. Results indicated that the average within-group interrater agreement for the school level of aggregation was $0.88$. Average agreement across the four climate dimensions ranged from $0.70$ to $1.00$. At the district level of aggregation, for the six districts other than HISD, average agreement was $0.86$. Agreement across the climate dimensions ranged from $0.68$ to $0.96$. For HISD as a whole ($N = 45$), average within-group interrater agreement was $0.90$. Agreement across the four climate dimensions ranged from $0.87$ to $0.93$. For the seven HISD subdistricts, average agreement was $0.86$. Average agreement across the climate dimensions ranged from $0.66$ to $1.00$. Thus, based on the consensus criterion, it appears that HISD should be considered a single district rather than a set of subdistricts. Further, the school and district level of aggregation appear to be equally appropriate based on this criterion (average agreement = $0.88$ for both).

With regard to the discrimination criterion, it was necessary to evaluate the extent to which school or district level of aggregation contributed to the variance in climate dimension scores. Thus, a series of analyses of variance (ANOVA)s were conducted on the four climate dimension scores, with school and district (both HISD and HISD subdistricts) levels of aggregation used as independent variables. ANOVA$s were conducted for the schools ($N = 32$) and districts ($N = 7$ with HISD combined into a single district, $N = 13$ with HISD split into subdistricts) with at least two representatives. The results of these analyses indicated that both school and district levels of aggregation contributed to differences in climate dimension scores. More specifically, there was a significant difference between schools on the Sanctions dimension, $F(31, 74) = 2.22$, $p <$
.008. There also were significant differences on the Social Influence dimension for both district comparisons (HISD combined $F(6, 109) = 3.31, p < .005$; HISD subdistricts $F(6, 107) = 3.277, p < .005$). Thus, based on the discrimination criterion, both school and district levels of aggregation appear appropriate.

To assess the predictability of the climate dimensions for the school and district levels of aggregation, hierarchical multiple regression analyses were conducted for each of the climate scales. The assumption behind the analyses was that individual, school, and district level scores may independently account for unique variance in training-related attitudes. The Performance Standards scale was chosen as the dependent variable for the regression analyses, because it was expected that a supportive climate would have important effects on individuals' beliefs that the training program would provide instruction on how to perform their jobs in accordance with school or district standards.

Four separate analyses were conducted for each of the climate scales, using Performance Standards as the dependent variable. Individual level scores were entered first. School level scores (each individual from a given school was assigned the mean level score for that school) were entered next. For three of the four scales, school level scores explained additional variance (from 3.4% to 4.1%) in Performance Expectation scores beyond that accounted for by individual level scores. The change in $R^2$ was significant ($p < .05$) for each of the climate scales with the exception of the Sanctions dimension. Finally, district level scores were entered with HISD combined into one district. In each of the four analyses, district level scores did not explain any additional variance in scores.
Based on the consensus, discrimination, and predictability criteria, the school level appears to be the most appropriate level of aggregation for all of the climate scales. Thus, analyses of hypotheses were conducted using school level climate data.

Training reactions. Participants’ reactions to the training program were assessed at the conclusion of the training program with a 9-item scale as well as an open-ended measure. As discussed previously, recent research suggests that the category of training reactions should be divided into two dimensions: affective and utility (Alliger & Janak, 1989; Alliger et al., 1997; Tannenbaum & Yukl, 1992). Similarly, in this study, participants responded to 4 items designed to measure their affective reactions, and 5 items assessing their perceptions of the usefulness of the training program. Participants also responded to an open-ended measure asking them to describe whether the program met their needs and expectations; however, responses to this question were determined to be uninformative and thus were not coded for content (see Appendix I for both measures). A principal components factor analysis indicated the presence of a single factor, thus the items were combined into one scale with a coefficient alpha of .97.

Learning. Participants’ learning was assessed by two measures. All trainees in the Summer Program completed a 20-item measure of content knowledge (designed specifically for their grade level) at the beginning and end of the training program. Both test versions contained identical questions, but the numbers involved in the math were changed for the post-program version. Teachers associated with the RUSMP program developed this measure (see Appendix J for a sample item).

Because the pre- and post-program content knowledge measures differed according to the specific program (five classes), z-scores were computed for the pre- and
post-program content knowledge measures in order to equate the scores of individuals from the five different classes. Split-half reliabilities were .65 and .59 for the pre- and post-program measures, respectively.

A second measure assessed changes in teachers' beliefs about teaching philosophy. All participants completed a 6-item measure assessing their beliefs about teaching style and strategy at the beginning and end of the program. As a major goal of the RUSMP program is the development and enhancement of teaching philosophies regarding mathematics, the measure of teaching philosophy was considered a measure of learning (see Appendix K for a copy of the measure). The six items comprising the pre- and post-program teaching philosophy measures were subjected to a factor analysis. Results indicated that the items were unidimensional. The observed reliabilities for the scales were .71 and .68, respectively.

**Demographic variables.** In addition to the above scales, several demographic variables were measured. These variables included age, sex, ethnicity, current school, degrees earned, years of teaching experience, area(s) currently taught, and whether the individual volunteered or was assigned to training.

**Results**

The data for the 117 participants in this study were first examined for missing values, outliers, and accuracy of data entry. The examination of the data revealed no systematic pattern of missing values or outliers beyond three standard deviations from the mean. Therefore, data for all 117 participants were used in all analyses.
Descriptives

Table 4 presents the means, standard deviations, and correlations of study variables. The correlations between the reasons for attending scales were moderate (ranging from -.26 to .50), and the correlations between the climate scales were moderate to high (ranging from .05 to .71). It should be noted that pre- and post-training knowledge scores were transformed to z-scores in order to account for different versions of the measure, thus, the means are exactly zero. The unstandardized means were 60.51 and 88.88 for the pre-training and post-training knowledge measures, respectively.

Means, standard deviations, and distributions were examined for all scales. Results of the data screening indicated moderate restriction of range for self-efficacy (M = 6.39, SD = .72), and extreme skewness and kurtosis for both the motivation to learn and reactions scales. Skewness and kurtosis were -4.06 and 21.15 for the motivation to learn scale and -2.5 and 6.88 for the reactions scale, respectively. Further, the means and standard deviations for both scales indicated severe restriction of range. Tabachnick and Fidell (1989) recommend that in such cases of severe J-shaped distributions, the data should be transformed by reflecting scores (reverse coding) and taking the inverse. Both scales were transformed accordingly, resulting in more normal distributions. After transformation, skewness and kurtosis statistics were -2.08 and 3.56 for motivation to learn and -.76 and -.69 for reactions, respectively. For all tests of hypotheses involving these scales, results are reported using both the original and transformed scales.

Examination of participants’ rank-ordered reasons for attending (shown in Table 5) revealed that 96% of participants reported that a desire for skill improvement was one
Table 4

Means, standard deviations, and intercorrelations of study variables (N = 117)

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NOTE: Coefficient alpha reliabilities are listed in parentheses along the diagonal.

*p < .05. **p < .01. *Coded as 1 = K-2, 2 = 3-4, 3 = 5-7, 4 = 8-Algebra, 5 = High School. *Coded as 1 = Male, 2 = Female. *Coded as 0 = Asked to Attend, 1 = Volunteered.
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<th>Reason</th>
<th>Ranked #1</th>
<th>Ranked #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skill Improvement</td>
<td>84 (79%)</td>
<td>18 (17%)</td>
</tr>
<tr>
<td>Intrinsic Interest</td>
<td>10 (9%)</td>
<td>54 (50%)</td>
</tr>
<tr>
<td>Career Management</td>
<td>3 (3%)</td>
<td>10 (9%)</td>
</tr>
<tr>
<td>Generalized Compliance</td>
<td>5 (5%)</td>
<td>2 (2%)</td>
</tr>
<tr>
<td>Performance Standards</td>
<td>5 (5%)</td>
<td>16 (15%)</td>
</tr>
<tr>
<td>Entitlement</td>
<td>0 (0%)</td>
<td>7 (7%)</td>
</tr>
</tbody>
</table>
of the two most important factors in their decision to attend the RUSMP program. Fifty-nine percent of participants reported that an intrinsic interest in the topic motivated their decision to attend the program. Twenty percent listed a desire to learn more about the standards and expectations of their administration as an important factor in their decision to attend.

Participant's open-ended responses to the question regarding their reasons for attending training also were coded by two independent raters. Of the 117 participants, 102 provided interpretable responses to the question. The raters assigned a value of 1-5 for compliance, skill improvement, intrinsic interest, career management, and performance standards elements, respectively. The raters assigned a value of 6 to those individuals who indicated that they were attending the training because of its positive reputation, or because of the opportunity to socialize with and learn from other teachers. Multiple ratings were allowed for each response depending on the number of categories mentioned. The raters' proportion of agreement was 79%. Raters were considered to agree only if their ratings matched on all elements. The raters discussed and came to a mutual decision for all responses where there was disagreement.

Results of the coding indicated that approximately 60% of participants described a desire to improve their skills as a motive behind their decision to attend training. Approximately 32% of participants claimed they were attending the training in order to comply with perceived job requirements or specific requests to attend the program. Twenty percent stated that the reputation of the program and/or the chance to work with other teachers motivated their decision to attend the program, and 14% wrote that they were attending the program because of an intrinsic interest in learning. Approximately
10% described their attendance as motivated by a need to learn about expectations of job performance, and 5% stated that they were attending the program in order to achieve certain career goals.

Tests of Hypotheses

Hypotheses 1 through 8 predicted that individual differences and contextual factors would be related to various reasons for attending training. These hypotheses were analyzed as follows. For each of the five reasons for attending scales, all individual difference and contextual variables were entered into a hierarchical regression analysis. The individual difference variables, including self-efficacy, goal orientation, career planning, and tenure, were entered in the first step. In the second step, contextual factors including reported voluntary/mandatory attendance and the four climate scales were entered into the analysis. Analyses were conducted in this manner in order to determine the independent effects of the variables of interest, thus providing a conservative test of the hypotheses. The results of these five regression analyses are presented in Table 6.

Hypothesis 1 predicted that individuals' self-efficacy would be positively related to career management and skill improvement motives. Results of the regression analysis indicate that pre-training self-efficacy was not related to career management reasons for attending ($\beta = -.12$, $p > .05$), nor was it related to the skill improvement scale ($\beta = .12$, $p > .05$). Due to the restriction of range in the self-efficacy variable ($M = 6.39$), the variable was transformed by reflecting (reverse coding) and taking a log transformation (Tabachnick & Fidell, 1989). For the resulting variable, higher values indicate lower levels of self-efficacy. When this variable was used in the regression analyses, however, results remained non-significant. Thus, Hypothesis 1 was not supported.
<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Generalized Compliance</th>
<th>Skill Improvement</th>
<th>Intrinsic Interest</th>
<th>Career Management</th>
<th>Performance Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1: Individual Differences</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>-.22</td>
<td>.12</td>
<td>.08</td>
<td>-.12</td>
<td>-.18</td>
</tr>
<tr>
<td>Learning Goal Orientation</td>
<td>-.11</td>
<td>.23*</td>
<td>.34**</td>
<td>-.05</td>
<td>.17</td>
</tr>
<tr>
<td>Performance Goal Orientation</td>
<td>.17</td>
<td>.15</td>
<td>.09</td>
<td>.13</td>
<td>.25**</td>
</tr>
<tr>
<td>Career Planning</td>
<td>-.09</td>
<td>.18</td>
<td>.10</td>
<td>.03</td>
<td>-.08</td>
</tr>
<tr>
<td>Tenure</td>
<td>-.12</td>
<td>-.03</td>
<td>-.02</td>
<td>-.13</td>
<td>.03</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>.18***</td>
<td>.16**</td>
<td>.16**</td>
<td>.08</td>
<td>.14*</td>
</tr>
<tr>
<td><strong>Step 2: Contextual Factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>-.15</td>
<td>.07</td>
<td>-.07</td>
<td>-.09</td>
<td>-.12</td>
</tr>
<tr>
<td>Social Influence</td>
<td>-.06</td>
<td>-.16</td>
<td>-.21</td>
<td>.07</td>
<td>.19</td>
</tr>
<tr>
<td>Environment</td>
<td>.00</td>
<td>-.14</td>
<td>-.18</td>
<td>.09</td>
<td>.07</td>
</tr>
<tr>
<td>Recognition</td>
<td>.13</td>
<td>.14</td>
<td>.22</td>
<td>.04</td>
<td>.11</td>
</tr>
<tr>
<td>Sanctions</td>
<td>.22*</td>
<td>.19</td>
<td>.21</td>
<td>-.11</td>
<td>.16</td>
</tr>
<tr>
<td>( \Delta R^2 )</td>
<td>.11*</td>
<td>.05</td>
<td>.06</td>
<td>.04</td>
<td>.17***</td>
</tr>
</tbody>
</table>

Note: Numbers represent standardized beta weights from the final regression equation, after all variables have been entered.

*\( p < .05 \), **\( p < .01 \), ***\( p < .001 \).
Hypotheses 2 through 4 predicted relationships between dimensions of goal orientation and reasons for attending training. Specifically, Hypothesis 2 predicted that performance goal orientation would be negatively related to a skill improvement motive. This hypothesis was not supported ($\beta = .15, p > .05$). Hypothesis 3 predicted that performance goal orientation would be positively related to a compliance motive. Results of the regression analysis showed that although the standardized beta weight for performance goal orientation was significant when all individual difference variables were entered in the analysis ($\beta = .24, p < .01$), the relationship was no longer significant when contextual factors were entered into the analysis ($\beta = .17, p > .05$). Thus, there was only partial support for Hypothesis 3.

Hypothesis 4 predicted that learning goal orientation would be positively related to an intrinsic interest motive, and that performance goal orientation would be negatively related to an intrinsic interest motive. Results indicated that learning goal orientation was positively related to intrinsic interest ($\beta = .34, p < .01$), giving support to Hypothesis 4. Contrary to expectations, performance goal orientation was not related to intrinsic interest ($\beta = .09, p > .05$), suggesting a lack of support for Hypothesis 4. Thus, there was only partial support for Hypothesis 4.

Hypothesis 5 predicted that career planning would be positively related to career management and skill improvement motives. Results of the regression analyses show that career planning was unrelated to a career management motive ($\beta = .03, p > .05$), or a skill improvement motive ($\beta = .18, p > .05$). Thus, Hypothesis 5 was not supported.

Hypothesis 6 predicted an inverse relationship between tenure and a performance standards reason for attending training. Results of the regression analysis indicated that
there was no relationship between tenure and performance standards ($\beta = .03, p > .05$), suggesting a lack of support for Hypothesis 6.

Hypothesis 7 predicted that, compared to those assigned to training, those who volunteered to attend the program would report higher levels of intrinsic interest, career management, and skill improvement as reasons for attending the program, and would be less likely to report compliance as a reason. Results of the regression analyses failed to support Hypothesis 6. As an additional test of this hypothesis, a series of one-way ANOVAs were conducted on the intrinsic interest, career management, skill improvement, and compliance reasons for attending, each using reported attendance (mandatory, voluntary) as the independent variable. As shown in Table 7, there were no significant differences between those that were required to attend and those that volunteered to attend the program for the intrinsic interest, career management, and skill improvement variables, however, there was a significant difference for the compliance variable, $F(1. 110) = 8.51, p < .01$. Examination of the means revealed that, as expected, those who were asked to attend the program reported higher levels of compliance ($M = 2.9$) as a reason for attending training than did those who volunteered to attend ($M = 2.1$). Thus, Hypothesis 7 was partially supported.

Hypothesis 8 predicted a direct relationship between updating climate and career management and skill improvement reasons for attending training. Results of the regression analysis revealed no relationship between the four climate dimensions and career management or skill improvement reasons. Further, examination of the bivariate correlations indicated no relationships between the four climate dimensions and either
Table 7

Analysis of Variance (ANOVA) Results: Voluntary/Mandatory Attendance Group

Differences on Reasons for Attending

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>F-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic Interest</td>
<td>.00</td>
<td>1</td>
<td>0.00</td>
</tr>
<tr>
<td>Career Management</td>
<td>7.63</td>
<td>1</td>
<td>3.59</td>
</tr>
<tr>
<td>Skill Improvement</td>
<td>.74</td>
<td>1</td>
<td>2.14</td>
</tr>
<tr>
<td>Generalized Compliance</td>
<td>14.13</td>
<td>1</td>
<td>8.51**</td>
</tr>
</tbody>
</table>

**p < .01.
career management or skill improvement motives for attending training (see Table 4). Thus, Hypothesis 8 was not supported.

Based on the hierarchical multiple regression analyses using all pre-training variables, there was limited support for Hypotheses 1 through 8. A second series of multiple regression analyses were performed to test these hypotheses. For each reason for attending, only the specific hypothesized antecedents were entered into the multiple regression equation. To test hypothesized antecedents of skill improvement, self-efficacy, performance goal orientation, career planning, climate dimensions, and voluntary/mandatory attendance were entered into the equation, as predicted in Hypotheses 1, 2, 5, 7, and 8. Results of this analysis (shown in Table 8) indicated that career planning was a significant predictor of a skill improvement motive ($\beta = .24$, $p < .05$), suggesting support for Hypothesis 5. The regression analysis was also conducted using the transformed measure of self-efficacy, due to the restriction of range associated with the variable. Results indicated that self-efficacy was positively related to a skill improvement motive ($\beta = -.21$, $p < .05$). The negative sign of the standardized beta weight reflects the transformed nature of the variable. These results are shown in Table 9. Thus, Hypothesis 1 did receive some support.

For a compliance motive, performance goal orientation and voluntary/mandatory attendance were entered into the regression, to specifically test Hypotheses 3 and 7. Results of the analysis (shown in Table 10) suggest that, as expected, individuals with higher levels of performance goal orientation ($\beta = .21$, $p < .05$) and those who reported being required to attend ($\beta = -.24$, $p < .05$) were more likely to endorse compliance as a
Table 8

Multiple Regression Results: Hypothesized Antecedents of Skill Improvement (n = 107)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Efficacy</td>
<td>.15</td>
<td>.08</td>
<td>.20</td>
<td>1.94</td>
</tr>
<tr>
<td>Performance GO</td>
<td>.07</td>
<td>.05</td>
<td>.14</td>
<td>1.40</td>
</tr>
<tr>
<td>Career Planning</td>
<td>.13</td>
<td>.06</td>
<td>.24*</td>
<td>2.34*</td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>.08</td>
<td>.12</td>
<td>.07</td>
<td>.66</td>
</tr>
<tr>
<td>Social Influence</td>
<td>-.09</td>
<td>.08</td>
<td>-.15</td>
<td>-1.09</td>
</tr>
<tr>
<td>Recognition</td>
<td>-.08</td>
<td>.08</td>
<td>-.14</td>
<td>-.95</td>
</tr>
<tr>
<td>Environment</td>
<td>.08</td>
<td>.09</td>
<td>.13</td>
<td>.89</td>
</tr>
<tr>
<td>Sanctions</td>
<td>.10</td>
<td>.07</td>
<td>.17</td>
<td>1.53</td>
</tr>
</tbody>
</table>

R² = .17

F(8, 98) = 2.50, p < .05

*p < .05.
Table 9

Multiple Regression Results: Hypothesized Antecedents of Skill Improvement, Using Transformed Self-Efficacy Measure (n = 107)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>B</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformed Self-Efficacy</td>
<td>-.67</td>
<td>.32</td>
<td>-.21</td>
<td>-2.10*</td>
</tr>
<tr>
<td>Performance GO</td>
<td>.07</td>
<td>.05</td>
<td>.13</td>
<td>1.36</td>
</tr>
<tr>
<td>Career Planning</td>
<td>.13</td>
<td>.06</td>
<td>.23*</td>
<td>2.29*</td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>.07</td>
<td>.12</td>
<td>.06</td>
<td>0.64</td>
</tr>
<tr>
<td>Social Influence</td>
<td>-.09</td>
<td>.08</td>
<td>-.15</td>
<td>-1.12</td>
</tr>
<tr>
<td>Recognition</td>
<td>-.07</td>
<td>.08</td>
<td>-.14</td>
<td>-0.92</td>
</tr>
<tr>
<td>Environment</td>
<td>.08</td>
<td>.09</td>
<td>.13</td>
<td>0.88</td>
</tr>
<tr>
<td>Sanctions</td>
<td>.10</td>
<td>.07</td>
<td>.17</td>
<td>1.55</td>
</tr>
</tbody>
</table>

R² = .18

F(8, 98) = 2.59, p < .05

*p < .05.
Table 10

Multiple Regression Results: Hypothesized Antecedents of Compliance (n = 109)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance GO</td>
<td>.28</td>
<td>.12</td>
<td>.21*</td>
<td>2.27*</td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>-.66</td>
<td>.26</td>
<td>-.24*</td>
<td>-2.56*</td>
</tr>
</tbody>
</table>

R² = .12

F(2, 106) = 6.92, p < .001

*p < .05.
major factor influencing their decision to attend the program. Thus, based on these analyses. Hypotheses 3 and 7 were supported.

For an intrinsic interest motive, learning goal orientation, performance goal orientation, and voluntary/mandatory attendance were entered into the regression to test Hypotheses 4 and 7. Results reveal that, as expected, learning goal orientation was positively related to an intrinsic interest motive ($\beta = .37, p < .001$), supporting Hypothesis 4; however, performance goal orientation ($\beta = .10, p > .05$) and voluntary/mandatory attendance ($\beta = -.01, p > .05$) were not related to an intrinsic interest motive (see Table 11). Thus, Hypothesis 4 was partially supported, and there was no support for Hypothesis 7.

With regard to a career management motive, the four dimensions of climate (Social Influence, Recognition, Environment, and Sanctions), voluntary/mandatory attendance, self-efficacy, and career planning were entered into the regression equation (see Table 12). These variables were predicted to influence a career management motive in Hypotheses 1, 5, 7, and 8. Hypothesis 1 predicted that self-efficacy would be positively related to a career management motive; however, the hypothesis was not supported ($\beta = -.14, p > .05$). The analysis also was conducted using the transformed self-efficacy variable; however, results remained non-significant. Hypothesis 5 predicted that career planning would be positively related to a career management motive. Again, the regression analysis did not support this hypothesis ($\beta = .00, p > .05$). Hypothesis 7 predicted that participants who volunteered to attend the training program would be more likely to report career management as a factor behind their attendance; however, results failed to support this hypothesis ($\beta = -.14, p > .05$). Hypothesis 8 predicted a direct
Table 11

Multiple Regression Results: Hypothesized Antecedents of Intrinsic Interest (n = 109)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance GO</td>
<td>.08</td>
<td>.07</td>
<td>.10</td>
<td>1.09</td>
</tr>
<tr>
<td>Learning GO</td>
<td>.45</td>
<td>.11</td>
<td>.37***</td>
<td>4.06***</td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>-.01</td>
<td>.15</td>
<td>-.01</td>
<td>-.07</td>
</tr>
</tbody>
</table>

$R^2 = .14$

$F(3, 105) = 5.75, p < .001$

***$p < .001.$
Table 12

Multiple Regression Results: Hypothesized Antecedents of Career Management (n = 108)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Efficacy</td>
<td>-.29</td>
<td>.22</td>
<td>-.14</td>
<td>-1.35</td>
</tr>
<tr>
<td>Career Planning</td>
<td>.01</td>
<td>.15</td>
<td>.00</td>
<td>.04</td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>-.45</td>
<td>.33</td>
<td>-.14</td>
<td>-1.37</td>
</tr>
<tr>
<td>Social Influence</td>
<td>.18</td>
<td>.24</td>
<td>.11</td>
<td>.76</td>
</tr>
<tr>
<td>Recognition</td>
<td>.15</td>
<td>.22</td>
<td>.10</td>
<td>.68</td>
</tr>
<tr>
<td>Environment</td>
<td>.06</td>
<td>.25</td>
<td>.04</td>
<td>.24</td>
</tr>
<tr>
<td>Sanctions</td>
<td>-.25</td>
<td>.19</td>
<td>-.16</td>
<td>-1.36</td>
</tr>
</tbody>
</table>

$R^2 = .09$

$F(7, 100) = 1.36, \ p > .05$
relationship between climate dimensions and a career management motive. Results of the regression analysis failed to support the hypothesis for any of the four climate dimensions.

Tenure was the only variable hypothesized to be related to a performance standards motive for attending training. Examination of the correlation (see Table 4) revealed no relationship between tenure and performance standards \((r = .01, p > .05)\); thus, Hypothesis 6 was not supported.

Hypotheses 9 through 11 expanded the conceptual model by linking participants' reasons for attending training to motivation to learn, and by linking pre-training characteristics to reactions and learning. Specifically, Hypothesis 9 predicted a positive relationship between motivation to learn and intrinsic interest, skill improvement, performance standards, and entitlement reasons for attending, as well as a negative relationship between motivation to learn and compliance and career management reasons for attending. Correlations were examined for intrinsic interest, skill improvement, and performance standards reasons for attending only, as entitlement did not emerge as a salient reason for attending training.

Examination of the correlations (see Table 4) revealed that, as expected, there were positive relationships between motivation to learn and intrinsic interest \((r = .38, p < .001)\) and skill improvement \((r = .38, p < .001)\) reasons for attending the program, supporting the hypothesis. In accordance with expectations, there also was a negative relationship between motivation to learn and compliance \((r = -.38, p < .001)\). Contrary to hypotheses, however, the correlations between motivation to learn and career management \((r = -.04, p > .05)\) and performance standards \((r = -.04, p > .05)\) were not
significant. The correlations were similar using the transformed motivation to learn scale.

Next, motivation to learn was regressed on reasons for attending. Results of the multiple regression (see Table 13) indicated that compliance was a significant predictor of motivation to learn ($\beta = -.31, p < .01$), suggesting that those participants who reported attending because such attendance was part of a perceived job requirement were less motivated to pay attention to instruction and learn the material being presented. Intrinsic interest also was related to motivation to learn ($\beta = .22, p < .05$), supporting the hypothesis.

The transformed motivation to learn scale also was regressed on the reasons for attending (see Table 14). Results indicated that compliance ($\beta = -.34, p < .001$), intrinsic interest ($\beta = .26, p < .01$), and skill improvement ($\beta = .21, p < .05$) all were significant predictors of motivation to learn, suggesting that those participants who attended the program due to intrinsic interest in the topic or a desire to improve their teaching skills were more motivated to learn the skills being presented, while those who attended due to a compliance motive were less motivated to learn. In all, the reasons for attending explained 34% of the variance in motivation to learn. Thus, Hypothesis 9 was supported for the compliance, intrinsic interest, and skill improvement reasons for attending, but not for career management, performance standards, and entitlement reasons for attending.

Hypothesis 10 predicted that participants’ motivation to learn would be positively related to reactions. Both the original reactions scale and the transformed reactions scale were used as dependent variables. To test this hypothesis, a hierarchical regression analyses was performed, with reactions as the dependent variable. Individuals’ reasons
Table 13

Multiple Regression Results: Reasons for Attending and Motivation to Learn (n = 113)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalized Compliance</td>
<td>-.09</td>
<td>.03</td>
<td>-.31**</td>
<td>-3.04**</td>
</tr>
<tr>
<td>Skill Improvement</td>
<td>.13</td>
<td>.07</td>
<td>.19</td>
<td>1.91</td>
</tr>
<tr>
<td>Intrinsic Interest</td>
<td>.12</td>
<td>.05</td>
<td>.22*</td>
<td>2.21*</td>
</tr>
<tr>
<td>Career Management</td>
<td>-.03</td>
<td>.03</td>
<td>-.01</td>
<td>-.14</td>
</tr>
<tr>
<td>Performance Standards</td>
<td>.01</td>
<td>.03</td>
<td>.04</td>
<td>.39</td>
</tr>
</tbody>
</table>

$R^2 = .27$

$F(5, 107) = 7.91, \ p < .001$

**$p < .01$.**
Table 14

**Multiple Regression Results: Reasons for Attending and Transformed Motivation to Learn (n = 113)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalized Compliance</td>
<td>-.04</td>
<td>.01</td>
<td>-.34**</td>
<td>-3.53***</td>
</tr>
<tr>
<td>Skill Improvement</td>
<td>.06</td>
<td>.03</td>
<td>.21*</td>
<td>2.27*</td>
</tr>
<tr>
<td>Intrinsic Interest</td>
<td>.05</td>
<td>.02</td>
<td>.26*</td>
<td>2.69**</td>
</tr>
<tr>
<td>Career Management</td>
<td>.02</td>
<td>.01</td>
<td>-.02</td>
<td>-.18</td>
</tr>
<tr>
<td>Performance Standards</td>
<td>.01</td>
<td>.01</td>
<td>.05</td>
<td>.54</td>
</tr>
</tbody>
</table>

$R^2 = .34$

$F(5, 107) = 11.13, p < .001$

*$p < .05. **$p < .01.$
for attending the program were entered, followed by motivation to learn. As shown in Table 15, results of the analysis using the original reactions scale as the dependent variable indicated that motivation to learn was not related to reactions ($\beta = .07$, $p > .05$). Results remained nonsignificant when the transformed reactions scale was used (see Table 16) and when both the transformed motivation to learn and transformed reactions scales were used (see Table 17).

Further examination of the data revealed that there were significant differences between classes on the reactions variable. Specifically, individuals attending class 3-4 reported significantly less positive reactions than the other classes, $F(4, 108) = 7.11$, $p < .001$ ($M's = 5.51$ vs. 6.67, respectively). When the 27 individuals from class 3-4 were removed, results of a regression analysis indicated that motivation to learn was a significant predictor of training reactions ($\beta = .54$, $p < .001$), even after accounting for differences in individuals’ reasons for attending the program (see Table 18). Thus, Hypothesis 10 received some support.

Hypothesis 11 predicted that motivation to learn would be positively related to learning. Hierarchical regressions analyses were performed for both the standardized post-training knowledge measure and the teaching philosophy scale. With regard to content knowledge, pre-program content knowledge scores were entered first to account for pre-program differences in content knowledge. Reasons for attending the program were entered in the second step, and motivation to learn was entered in the final step. Results of the analysis showed that motivation to learn was not a significant predictor of actual learning on the content knowledge measure ($\beta = -.02$, $p > .05$). These results are
Table 15

Hierarchical Multiple Regression Results: Motivation to Learn and Reactions (n = 111)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compliance</td>
<td>-.09</td>
<td>.10</td>
<td>-.10</td>
<td>-.85</td>
</tr>
<tr>
<td>Skill Improvement</td>
<td>-.20</td>
<td>.21</td>
<td>-.10</td>
<td>-.92</td>
</tr>
<tr>
<td>Intrinsic Interest</td>
<td>.38</td>
<td>.17</td>
<td>.26</td>
<td>2.25*</td>
</tr>
<tr>
<td>Career Management</td>
<td>.06</td>
<td>.08</td>
<td>.08</td>
<td>.76</td>
</tr>
<tr>
<td>Performance Standards</td>
<td>-.05</td>
<td>.08</td>
<td>-.07</td>
<td>-.64</td>
</tr>
<tr>
<td>R² = .09</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 1:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivation to Learn</td>
<td>.18</td>
<td>.30</td>
<td>.07</td>
<td>.62</td>
</tr>
<tr>
<td>ΔR² = .003</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*p < .05.

Note: Results are from the final equation, after all variables have been entered.
Table 16

Hierarchical Multiple Regression Results: Motivation to Learn and Transformed

Reactions (n = 111)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1:</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compliance</td>
<td>-.09</td>
<td>.10</td>
<td>-.10</td>
<td>-.85</td>
</tr>
<tr>
<td>Skill Improvement</td>
<td>-.20</td>
<td>.21</td>
<td>-.10</td>
<td>-.92</td>
</tr>
<tr>
<td>Intrinsic Interest</td>
<td>.38</td>
<td>.17</td>
<td>.26</td>
<td>2.25*</td>
</tr>
<tr>
<td>Career Management</td>
<td>.06</td>
<td>.08</td>
<td>.08</td>
<td>.76</td>
</tr>
<tr>
<td>Performance Standards</td>
<td>-.05</td>
<td>.08</td>
<td>-.07</td>
<td>-.64</td>
</tr>
<tr>
<td>R² = .09</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 1:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivation to Learn</td>
<td>.18</td>
<td>.30</td>
<td>.07</td>
<td>.62</td>
</tr>
<tr>
<td>ΔR² = .003</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05.

Note: Results are from the final equation, after all variables have been entered.
Table 17

Hierarchical Multiple Regression Results: Transformed Motivation to Learn and Transformed Reactions (n = 111)

<table>
<thead>
<tr>
<th>Variable</th>
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<tbody>
<tr>
<td>Step 1:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Compliance</td>
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<td>.02</td>
<td>-.07</td>
<td>-.58</td>
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<td>Skill Improvement</td>
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<td>.05</td>
<td>.06</td>
<td>.55</td>
</tr>
<tr>
<td>Intrinsic Interest</td>
<td>.06</td>
<td>.04</td>
<td>.16</td>
<td>1.40</td>
</tr>
<tr>
<td>Career Management</td>
<td>.00</td>
<td>.02</td>
<td>.03</td>
<td>.25</td>
</tr>
<tr>
<td>Performance Standards</td>
<td>-.01</td>
<td>.02</td>
<td>-.04</td>
<td>-.40</td>
</tr>
<tr>
<td>R² = .10*</td>
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<tr>
<td>Step 1:</td>
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<tr>
<td>Transformed Motivation</td>
<td>.26</td>
<td>.18</td>
<td>.16</td>
<td>1.41</td>
</tr>
<tr>
<td>to Learn</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ΔR² = .02</td>
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</tr>
</tbody>
</table>

Note: Results are from the final equation, after all variables have been entered.
Table 18

**Subset Hierarchical Multiple Regression Results: Motivation to Learn and Reactions**

\( (n = 106) \)

<table>
<thead>
<tr>
<th>Variable</th>
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<th>( \beta )</th>
<th>( t )</th>
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</thead>
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<td><strong>Step 1:</strong></td>
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<tr>
<td>Compliance</td>
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<td>.05</td>
<td>.11</td>
<td>.93</td>
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<td>.08</td>
<td>.67</td>
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<td>.04</td>
<td>-.03</td>
<td>-.32</td>
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<td>Performance Standards</td>
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<td>.04</td>
<td>.07</td>
<td>.73</td>
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<tr>
<td><strong>R^2 = .20</strong></td>
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<td><strong>Step 1:</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivation to Learn</td>
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<td>.14</td>
<td>.54</td>
<td>4.98***</td>
</tr>
<tr>
<td><strong>( \Delta R^2 = .020</strong>* )</td>
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<td></td>
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</table>

**p < .01. ***p < .001.**

Note: Results are from the final equation, after all variables have been entered.
shown in Table 19. The regression analysis also was performed using the transformed motivation to learn scale; again, results were not significant.

Hierarchical regression analyses also were performed using the teaching philosophy measure as the dependent variable (see Table 20). Participants' pre-program teaching philosophy scores were first covaried out of the equation, followed by reasons for attending. Motivation to learn entered the equation in the final step. Results of the analysis revealed that motivation to learn was not a significant predictor of participants' post-program teaching philosophy ($b = -.04, p > .05$). The analysis also was conducted using the transformed motivation to learn scale. Again, the results were not significant. Thus, Hypothesis 11 was not supported.

Discussion

This study addressed a gap in the research on pre-training characteristics and training effectiveness by exploring the factors that influence individuals' decisions to attend training and development programs. Specifically, this study identified a set of reasons that individuals might consider as factors in their decisions to attend training and evaluated a set of individual difference variables and contextual factors as possible influences on such reasons. Further, reasons for attending were linked to a conceptual model that included relationships among key indicators of training effectiveness.

Based on a review of previous training research and related literature, a set of six potential motives or reasons for attending was identified. The first hypothesized motive was compliance. That is, some individuals were hypothesized attend training either due to an explicit job requirement or because they implicitly perceived the training as part of their job. A second hypothesized motive was intrinsic interest, or a personal desire to
**Table 19**

Hierarchical Multiple Regression Results: Motivation to Learn and Post-Training

**Knowledge (n = 111)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
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<tbody>
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<tr>
<td>Pre-Training Knowledge</td>
<td>.55</td>
<td>.08</td>
<td>.54</td>
<td>6.70***</td>
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<td>$R^2 = .33^{***}$</td>
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<td>Compliance</td>
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<td>.01</td>
<td>.11</td>
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<td>Skill Improvement</td>
<td>.31</td>
<td>.17</td>
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<td>1.85</td>
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<td>Intrinsic Interest</td>
<td>-.18</td>
<td>.13</td>
<td>-.14</td>
<td>-1.41</td>
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<td>Career Management</td>
<td>.03</td>
<td>.06</td>
<td>.04</td>
<td>.47</td>
</tr>
<tr>
<td>Performance Standards</td>
<td>-.10</td>
<td>.06</td>
<td>-.14</td>
<td>-1.55</td>
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<tr>
<td>$\Delta R^2 = .05$</td>
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<td><strong>Step 3:</strong></td>
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</tr>
<tr>
<td>Motivation to Learn</td>
<td>-.06</td>
<td>.23</td>
<td>-.02</td>
<td>-.24</td>
</tr>
<tr>
<td>$\Delta R^2 = .00$</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

***p < .001.

Note: Results are from the final equation, after all variables have been entered.
Table 20

Hierarchical Multiple Regression Results: Motivation to Learn and Post-Training

Teaching Philosophy (n = 110)

<table>
<thead>
<tr>
<th>Variable</th>
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<th>B</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1:</strong></td>
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<tr>
<td>Pre-Teaching Philosophy</td>
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<td>.08</td>
<td>.63</td>
<td>8.51***</td>
</tr>
<tr>
<td>( R^2 = .46^{***} )</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2:</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compliance</td>
<td>-.13</td>
<td>.08</td>
<td>-.18</td>
<td>-1.97</td>
</tr>
<tr>
<td>Skill Improvement</td>
<td>-.03</td>
<td>.14</td>
<td>-.02</td>
<td>-.24</td>
</tr>
<tr>
<td>Intrinsic Interest</td>
<td>-.01</td>
<td>.11</td>
<td>-.01</td>
<td>-.10</td>
</tr>
<tr>
<td>Career Management</td>
<td>-.03</td>
<td>.05</td>
<td>-.04</td>
<td>-.55</td>
</tr>
<tr>
<td>Performance Standards</td>
<td>-.03</td>
<td>.06</td>
<td>-.05</td>
<td>-.56</td>
</tr>
<tr>
<td>( \Delta R^2 = .04 )</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3:</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivation to Learn</td>
<td>-.06</td>
<td>.23</td>
<td>-.02</td>
<td>-.24</td>
</tr>
<tr>
<td>( \Delta R^2 = .001 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***p < .001.

Note: Results are from the final equation, after all variables have been entered.
learn more about the training topic because the topic seemed interesting and enjoyable. A desire for skill maintenance and acquisition was identified as a third potential factor influencing decisions to attend training. That is, it was hypothesized that some individuals would cite a need to improve their teaching skills and remain current in their field as a reason behind their decision to attend training.

A fourth potential reason was career management. Specifically, some individuals were expected to report that they associated attendance at training and development programs with desirable career outcomes, including salary increases, promotion, and greater job responsibility. The fifth hypothesized factor was labeled performance standards, defined as a motivation to learn more about job duties and the expectations of the employer. The sixth and final hypothesized reason for attending was entitlement. Specifically, some individuals were hypothesized to report that they were attending training because they felt such training was an opportunity that they should take advantage of.

**Summary of Results**

Results of the study suggested support for the expected factors or reasons behind training attendance. Examination of reliabilities, as well as factor analysis results, suggested that five dimensions adequately captured the core reasons or factors behind individuals’ decision to attend training programs. The one exception was the entitlement dimension, which did not appear to be a major factor determining individuals’ attendance.

In general, the reasons influencing decisions to attend training suggested by analysis of the data fit the hypothesized dimensions. The empirical results did suggest,
however, that the career management and compliance motives were more complex than hypothesized. More specifically, it was expected that a desire to gain a salary increase would be part of an individual’s personal desire to advance their career, aside from their expected job duties. The factor loadings, however, suggested that to the extent that individuals perceived a link between training and salary, such training was considered a job requirement. This suggests that the extent to which training opportunities are associated with pay increases or bonuses may influence individuals’ perceptions of that training.

Hypotheses 1 through 7 predicted relationships between individual differences and contextual factors previously associated with training effectiveness and the hypothesized reasons influencing training attendance. More specifically, Hypothesis 1 predicted that self-efficacy would be positively related to career management and skill improvement motives. Results of the hierarchical regression using all pre-training variables did not support the hypothesis. Self-efficacy was not related to skill improvement or career management reasons for attending training. Results of a regression analysis including only hypothesized antecedents of skill improvement and career management motives also failed to find a significant relationship between self-efficacy and either motive. When the original self-efficacy measure was replaced by the transformed variable, however, there was a significant relationship between self-efficacy and a skill improvement motive, suggesting that individuals with higher levels of self-efficacy were more likely to report skill improvement as a factor determining their attendance at training. Thus, Hypothesis 1 received limited support.
Hypothesis 2 predicted that performance goal orientation would be negatively related to a skill improvement motive. Results of both the hierarchical regression analysis using all pre-training variables and the multiple regression analysis testing only hypothesized antecedents failed to support Hypothesis 2. There was no relationship between performance goal orientation and a skill improvement motive.

It is unclear why Hypothesis 2 failed to receive support. Research supports the argument that individuals with strong performance goal orientations are less likely to perceive the relationship between effort and performance (Dweck & Leggett, 1988; Elliott & Dweck, 1985), and researchers have argued that those with a strong performance goal orientation are likely to believe that individuals who attend training must be substandard performers. Thus, it was argued that such individuals would be less likely to attend training due to a desire to improve their skills. The results of this study, however, suggest that individuals with strong performance goal orientation are no less likely to view skill improvement as a factor influencing their decision to attend training.

It may be the case that the climate for training can outweigh any concerns or fears that high performance goal orientation individuals have about the appearance of training. That is, although those with high performance goal orientations may hold a belief that training is necessary only for substandard performers, the extent to which their employers support training initiatives and promote the advantages of training for all employees may override such concerns and mitigate the effects of performance goal orientation. In this study, mean perceptions of climate were moderately positive (see Table 4), suggesting that training may be viewed positively by participants in this study. An indirect measure of this explanation may be gained by an examination of the training utility measure,
which assessed participants’ feelings toward training based on past experiences. Mean levels of training utility were moderately high (see Table 4), suggesting that most participants viewed training positively. Thus, a supportive training climate may be highly influential in determining high performance goal orientation individuals’ perceptions of training. This is an area for future research.

Hypothesis 3 predicted that performance goal orientation would be positively related to a compliance motive. Results of the hierarchical regression analysis using all pre-training variables suggested support for the hypothesis at the first step, when only individual differences were included in the equation. When contextual variables were included in the equation, however, the beta weight became non-significant. When the compliance variable was regressed only on the hypothesized antecedents of performance goal orientation and voluntary/mandatory attendance, performance goal orientation was positively related to compliance as a motive. Thus, overall, Hypothesis 3 received support.

Hypothesis 4 predicted that learning goal orientation would be positively related to an intrinsic interest motive, and that performance goal orientation would be negatively related to an intrinsic interest motive. Results of both the hierarchical regression analysis and the specific regression analysis using only hypothesized antecedents supported the hypothesis for learning goal orientation. Higher levels of learning goal orientation were consistently related to an intrinsic interest motive, lending support to Hypothesis 4. The expected negative relationship between performance goal orientation and intrinsic interest, however, was not supported by the data.
The lack of support for the anticipated negative relationship between performance goal orientation and compliance may be explained by the supportive climate for training that participants reported in this study. As discussed previously, participants reported generally supportive climate both at the school and district level. To the extent that employers support training initiatives and provide an environment conducive to training and transfer opportunities, those with a high performance goal orientation may not perceive training in a negative light as hypothesized.

Hypothesis 5 predicted that career planning would be positively related to career management and skill improvement motives. Results of the hierarchical regression analyses did not support the hypothesis, as career planning was unrelated to both career management and skill improvement motives. When multiple regression analyses were conducted including only hypothesized antecedents, a positive relationship between career planning and skill improvement emerged, indicating that individuals with higher levels of career planning were more likely to report skill improvement as an important reason behind their decision to attend training. The relationship between career planning and a career management motive, however, remained nonsignificant. Thus, Hypothesis 5 received some support.

It is not clear why career planning was unrelated to a career management motive. The career planning scale assessed the extent to which individuals reported having clear career plans and personal strategies designed to achieve career goals. High scores on the career management scale indicated that individuals were motivated to attend training because such attendance made a good impression with employers, was linked to graduate course credit, and looked favorable on their employment record. The results of this study
suggest that individuals with well-formed career plans may be less concerned with impressions, and more concerned with the acquisition of valued skills.

Hypothesis 6 predicted that tenure would be negatively related to a performance standards motive. Results of both the hierarchical regression analysis and the specific regression analysis testing only hypothesized antecedents suggested that tenure was not related to a performance standards motive. The lack of support for this hypothesis is somewhat surprising. It was expected that those individuals with less teaching experience would be more likely to attend training in order to learn about the expectations and standards of their employers; however, this was not the case. To the extent that the professional development program examined in this study was perceived by participants as involving innovative teaching methods and instruction, and to the extent such methods were perceived to differ from current standards of performance, participants at various experience levels may have expected that the program would provide them with valuable information regarding the expectations of their employer. This explanation deserves further attention.

Hypothesis 7 predicted that, compared to those required to attend training, individuals who volunteered to attend would report higher levels of intrinsic interest, career management, and skill improvement as reasons for attending the program, and would be less likely to report compliance as a reason. Results indicated no support for the hypothesis, with the exception of the compliance variable. Those individuals who reported volunteering for the program were less likely to perceive compliance as a factor influencing their decision to attend. Overall, these results suggest that the factors influencing individuals’ decisions to attend training are somewhat complex, as there were
no differences between those who were asked to attend the training and those who
volunteered to attend on the extent to which they felt intrinsic interest, career
management, and skill improvement concerns influenced their decision to come to
training.

Hypotheses 8 predicted a direct relationship between updating climate and career
management and skill improvement reasons for attending training. Results of all
analyses indicated no support for this hypothesis; in fact, the only significant relationship
for climate was the relationship between the Sanction dimension (the extent to which
participants reported the provision of discipline and negative consequences for not
applying trained skills) and compliance.

Perhaps the most straightforward explanation for the lack of results regarding
climate is the relatively weak differentiation of climate obtained in this study. More
specifically, three criteria were used to determine the appropriate level of aggregation
(school vs. district); however, results of the tests used to evaluate each criterion did not
give particularly strong support for the use of either school or district level data. The
small sample size within districts and schools in this study contributed to this problem.
Many schools and districts had an extremely small number of individuals participating in
the program, and the lack of adequate sample size likely comprised the climate analyses.

Hypotheses 9 through 11 expanded the conceptual model of the study by linking
reasons for attending training to motivation to learn, and by examining other key
indicators of training effectiveness. Hypothesis 9 predicted a positive relationship
between motivation to learn and intrinsic interest, skill improvement, performance
standards, and entitlement reasons for attending, as well as a negative relationship
between motivation to learn and compliance and career management motives. This hypothesis was supported for compliance, intrinsic interest, and skill improvement motives, but not for performance standards or career management motives. Individuals reporting higher levels of intrinsic interest and a desire to improve their skills were more highly motivated, while those who attended the training in order to comply with perceived job requirements reported lower levels of motivation.

Hypothesis 10 predicted that motivation to learn would be positively related to reactions. After examination of the data led to removal of one class from this analysis, the hypothesis was supported—those with higher levels of motivation reported more positive reactions. Replicating previous research (Mathieu et al., 1992; Quiñones, 1995).

Hypothesis 11 predicted that motivation to learn would be positively related to learning. Two measures of learning were used to test this hypothesis: the standardized post-training knowledge measure and the teaching philosophy scale. Results for both learning measures failed to support the hypothesis. Motivation to learn was unrelated to actual learning. The severe restriction of range may explain these results. Although the transformed motivation to learn variable was used in analyses as well as the original measure, the distribution of the measure still departed from normality. Thus, the lack of variance in participants’ motivation to learn may have had detrimental effects on analyses involving the construct.

**Study Implications and Research Directions**

The results of this study shed new light on the study of the pre-training environment and training effectiveness. Previous research has suggested that individual differences and contextual factors can be important influences on trainees’ motivation to
learn (Mathieu et al., 1992; Noe & Schmitt, 1986; Quiñones, 1995); the results of this study expand the research area and suggest directions for future research.

In particular, the results of this study suggest that individuals may have various motives or reasons for attending training, and that research categorizing trainees’ participation as voluntary or compulsory may fail to capture the full nature of trainees’ motives (Baldwin et al., 1991; Hicks & Klimoski, 1987). As organizations move toward a continuous learning philosophy (Noe & Ford, 1992), individual perceptions of training may be shifting, such that training is viewed more as an opportunity than a consequence of substandard performance. The results of this study certainly suggest that many individuals perceive training as an opportunity to improve skills and participate in activities that they find interesting.

Further, this study suggests that factors influencing individuals’ decisions to attend training may have significant effects on their training experience. More specifically, in this study individuals who reported a desire to attend training in order to develop job-related skills or simply pursue an area of personal interest also reported a greater intention to pay attention during the program and exert effort to acquire the skills and knowledge presented in the program. Those who felt they were complying with job requirements by attending reported less motivation to learn the training material. Thus, the nature of trainees’ motives may have a significant effect on essential training outcomes.

Future research should continue to examine the nature of trainees’ motives or reasons for attending, and determine their influence on training effectiveness. In this study, relationships between reasons for attending and post-training outcomes were not
hypothesized; however, this potential link deserves attention. This study determined that trainees have varied motives determining their decision to attend training, and that these motives are related to their motivation to learn. It is likely, then, that such motives may affect other aspects of the training experience, such as learning strategies, performance during training, reactions, and transfer of trained behaviors to the job.

For example, to the extent that individuals pursue training due to intrinsic personal interest in the topic, they make a personal commitment to the training program. Even if they are disappointed in the program itself, they may be less likely to acknowledge negative reactions compared to an individual who attended the training to comply with job requirements, simply because of cognitive dissonance. This possibility and others should be examined further.

Future research also should consider manipulating individuals' reasons for attending training, in order to determine the causal nature of the relationship between reasons for attending training and other pre-training variables. In this study, all variables were measured rather than manipulated; however, manipulation of individuals' reasons for attending training would provide much needed information regarding the influence of such motives on motivation to learn and other training-related variables.

The relationships between individual differences and contextual factors and individuals' reasons for attending training also deserve further research attention. In this study, only individual differences and contextual factors that had established influences on the training process were included. It is likely, however, that other individual difference and contextual variables also influence the reasons why individuals participate in training programs. Further, many of the variables included in this study have
interactive effects on one another. These complex relationships were not examined in the present study; however, such interactions merit exploration in future research.

Study Limitations

There are several limitations to this study that should be noted when interpreting results and evaluating the research implications. Perhaps the largest limitation is the potential for common method variance. All of the measures in the study were collected from the same source; thus, common method variance is an important concern. The pattern of intercorrelations was not abnormally high, indicating that method variance may not have been a significant problem, but the issue may not be discounted. In particular, independent evaluations of transfer climate would have been desirable. Such evaluations were not possible in this study.

A second limitation of this study regards the measures utilized in the study. Various constraints, including the desire to keep surveys brief, prohibited the use of the full number of items for several measures, including motivation to learn and self-efficacy. In spite of this limitation, however, coefficient alpha reliabilities were acceptably high for most of the measures. Several of the study variables also suffered from restriction of range, a problem that may have been related to the use of abbreviated measures. To the extent possible, these issues were addressed through data screening and transformations.

A third limitation to this study, discussed previously, is the sample size in the study (N = 117). While not inadequate, a larger sample size would have been more desirable, particularly in the case of climate analyses, where the splitting of data into school and district levels resulted in extremely small sample sizes.
A fourth possible limitation to this study regards the measurement of the reasons for attending training. The items measuring participants' reasons for attending training were created based on the hypothesized factors influencing decisions to attend training. To some extent then, the resulting factor analysis on the data was somewhat confirmatory in nature. This approach was appropriate, given the exploratory nature of the variables. But future research should measure and categorize reasons for attending using another perspective. As discussed previously, future research utilizing a more qualitative approach would greatly contribute to an understanding of the forces motivating individuals' decisions to attend training and potentially provide further support for the categories derived in this study. For example, researchers could develop a set of reasons for attending using interviews or Q-sort techniques.

Such research also could identify important factors or reasons for attending not identified in this study. For example, various constraints prohibited the inclusion of more items assessing participants' reasons for attending. As a result, there was only item measuring the extent to which participants felt the training program was an opportunity to network with other teachers. This alone prohibited a thorough evaluation of networking as a motive for attending training and development programs. Future research should explore the extent to which networking considerations as well as other reasons influence decisions to attend training and development programs.

Conclusion

In summary, this study contributes to the training literature by identifying the various factors that influence individuals' decisions to attend training and development programs. In particular, this study suggests that complex forces are responsible for
individuals' decisions to attend and participate in training. Such factors have not been examined sufficiently in previous research on training effectiveness. To the extent that these motives and their influence on the training process can be identified, our understanding of the pre-training environment and training effectiveness can only benefit.
References


Appendix A

Pre-Program General Survey Instructions

Welcome to the RUSMP network! This survey covers a range of topics, including your expectations for the summer course, your instructional needs, and your attitudes about learning and teaching mathematics.

The first two pages of the survey will provide our funders with required demographic information and the course instructors with an idea of your needs and expectations. Your answers to the questions on the last 7 pages will remain confidential and will not be shared with the course instructors. At no point will any of the information you provide be used to evaluate you individually.
Appendix B

Self-Efficacy Instructions and Items

Please indicate how strongly you agree or disagree with the following items.

1. I think I will be able to perform well in this program
2. I am sure I can learn the math content and pedagogy taught this summer in a short period of time
3. I do not feel that I am as capable of performing the skills taught in this program as other people
4. It will take me a long time to learn the math content and teaching practices taught in this program
5. I am confident that I can learn the curriculum of this program successfully
Appendix C

Goal Orientation Instructions and Items

Using the scale below, please indicate your level of agreement with the following items. These items are intended to measure your approach to various tasks in your life. Please consider each item in terms of your general approach to tasks, not in terms of your approach to tasks in the context of your job.

1. I like to work on tasks that I have done well on in the past
2. I like to be fairly confident that I can successfully perform a task before I attempt it
3. I prefer to do things that I can do well rather than things that I do poorly
4. I'm happiest at work when I perform tasks on which I know I won't make any errors
5. The things I enjoy the most are the things I do the best
6. The opinions others have about how well I can do certain things are important to me
7. I feel smart when I can do something better than most other people
8. I feel smart when I do something without making any mistakes
9. The opportunity to do challenging work is important to me
10. When I fail to complete a difficult task, I plan to try harder the next time I work on it
11. I prefer to work on tasks that force me to learn new things
12. The opportunity to learn new things is important to me
13. I do my best when I'm working on a fairly difficult task
14. I try hard to improve on my past performance
15. The opportunity to extent the range of my abilities is important to me
16. When I have difficulty solving a problem, I enjoy trying different approaches to see which one will work
Appendix D
Career Planning Instructions and Items

These questions are about your career plans in general. Please indicate your level of agreement with each statement.

1. I have not really decided what my career objectives should be
2. I have a plan for my career
3. I have a strategy for achieving my career goals
4. I know what I need to do to reach my career goals
5. My career objectives are not clear
6. I change my objectives frequently
7. In my position, I do not feel it is necessary to have specific career goals
Appendix E

Training Utility Instructions and Items

These questions are about professional development programs in general. How much do you agree with the following?

1. The knowledge and skills gained through my participation in professional development programs can help advance my career

2. I have been able to apply what I have learned in professional development programs to my job

3. The time spent over the summer to attend professional development programs has been worthwhile

4. The programs I have attended have been useful for my development as a teacher

5. Most of the material in the professional development programs I have attended has been relevant to skills I hoped to develop
Appendix F

Reasons for Attending Instructions and Items

Please indicate how strongly you agree or disagree with the following

1. I am expected to attend
2. Personally, I find the curriculum of the program interesting
3. It will help me to learn how to teach more effectively
4. Attending this program looks good on my record
5. Programs such as these are a benefit associated with my job
6. It will help me to learn about my school/district’s expectations and standards
7. I can receive graduate credit for attending
8. If I want to receive a salary increase, it’s necessary to attend this program
9. I think it will be an interesting challenge to learn the things taught in this program
10. It’s an implicit requirement for my job
11. The school/district administration asked/nominated me to attend
12. I have been told that I need to improve my skills in this area
13. Attending this summer course will make a good impression on the school/district
14. The skills taught in this program will help me stay up-to-date in my field
15. It will help me learn what the school/district expects of me in terms of how to perform my job
16. I think the curriculum will be enjoyable
17. It is a benefit offered by my school/district, and I decided to take advantage of it
18. Attendance at this program is necessary to advance and/or receive pay raises in this district/school
19. Mastery of things taught in the course is necessary to keep my position

20. It will be fun to learn the program curriculum

21. I think it’s important to develop the kinds of skills that will be taught this summer

22. It will be useful for understanding how my school/district administration expects me to teach

23. Attending this program is like getting my ticket stamped— I need to have it on my record if I hope to receive pay increases or greater responsibility

24. I’ve earned the right to attend this training program to improve my skills

25. Attending this program gives me a chance to meet and socialize with other teachers

26. It fulfills an explicit requirement for my job

27. By doing so, I am complying with school/district administration orders

28. It gives me a chance to compare notes and catch up with people from other schools/districts

29. I am entitled to such opportunities for professional development
Please rank your top two reasons for attending the RUSMP Summer Program. Place a “1” in the space next to the category that best describes why you are attending this program. Then place a “2” in the space next to the category that next best describes your reasons for attending the program.

_____ This program will allow me to learn how to better perform my job duties and to better understand what the administration expects of me

_____ Attending this program looks good and will result in benefits to my career, such as greater responsibility, graduate credit and/or certification, pay increases, promotion, etc.

_____ I am attending this program because I have to and/or to please the administration

_____ This program is an opportunity to develop my skills in teaching mathematics and improve my content knowledge

_____ I deserve the chance to attend this program. It has a good reputation, and I want to see what it is all about

_____ This program sounded like a lot of fun, and I thought it sounded like an interesting opportunity to challenge myself
Appendix G

Motivation to Learn Instructions and Items

Please indicate how strongly you agree or disagree with the following

1. I will try to learn as much as I can during this program
2. I will put forth a lot of effort during this program
3. I do not expect to pay much attention to the material being presented in this program
4. If I can't understand some part of the program, I will try harder
5. I am very unmotivated to learn anything during this program
6. I have no desire to increase my performance on the things emphasized in this program
Appendix H

Organizational Climate Instructions and Items

We are interested in knowing whether you feel you will be able to implement what you have learned this summer in your school. Please answer the questions below thinking about your own school/district

1. The administration sets goals and/or standards that encourage teachers to apply skills they’ve learned in professional development programs in their classrooms

2. Teachers and colleagues do not understand or approve of new ways and styles of teaching

3. No one notices whether teachers apply what they learn in professional development programs in their classrooms

4. Teachers face pressure from peers to continue teaching using traditional styles and methods

5. Teachers are reminded of the importance of applying new teaching methods in the classroom

6. There is a supportive environment for adopting new approaches to teaching mathematics

7. Where necessary, tools and aids are available for teachers to use in implementing new teaching skills and strategies

8. Teachers are encouraged to make a sincere effort to apply what they learn in professional development programs in the classroom

9. Individual teachers who try new teaching strategies in the classroom are looked down upon by their colleagues and superiors

10. Teachers are rewarded for applying the skills they learn in professional development programs to the classroom

11. When teachers don’t properly adjust their teaching style to incorporate the skills they learn in professional development programs, their colleagues notice and encourage them to do so
12. There are usually negative consequences when teachers use what they have learned in professional development programs in their classrooms.

13. If teachers fail to apply what they have learned in professional development programs in their classrooms, they are disciplined.

14. Teachers face negative consequences if they do not apply the knowledge and skills learned in training and development programs in their classrooms.

15. There are clear rewards for implementing skills learned in professional development programs in the classroom.

16. The structure and demands of teaching in our school allows teachers to use the skills they learn in professional development programs.

17. If I implement the strategies I have learned this summer in my classroom, I will be recognized for my efforts.

18. The nature of my job will not allow me to implement the strategies I have learned in this program.

19. The administration is too busy to follow up and/or notice whether I use the strategies I have learned in this program.

20. In the future, I will probably receive information from the administrator of my school about the importance of applying the skills I learned in this program to the classroom.

21. The administration sets goals and/or standards that encourage teachers to apply skills they've learned in professional development programs in their classrooms.

22. Teachers and colleagues do not understand or approve of new ways and styles of teaching.

23. No one notices whether teachers apply what they learn in professional development programs in their classrooms.

24. Teachers face pressure from peers to continue teaching using traditional styles and methods.

25. Teachers are reminded of the importance of applying new teaching methods in the classroom.

26. There is a supportive environment for adopting new approaches to teaching mathematics.
27. Where necessary, tools and aids are available for teachers to use in implementing new teaching skills and strategies

28. Teachers are encouraged to make a sincere effort to apply what they learn in professional development programs in the classroom

29. Individual teachers who try new teaching strategies in the classroom are looked down upon by their colleagues and superiors

30. Teachers are rewarded for applying the skills they learn in professional development programs to the classroom

31. When teachers don't properly adjust their teaching style to incorporate the skills they learn in professional development programs, their colleagues notice and encourage them to do so

32. There are usually negative consequences when teachers use what they have learned in professional development programs in their classrooms

33. If teachers fail to apply what they have learned in professional development programs in their classrooms, they are disciplined

34. Teachers face negative consequences if they do not apply the knowledge and skills learned in training and development programs in their classrooms

35. There are clear rewards for implementing skills learned in professional development programs in the classroom

36. The structure and demands of teaching in our school allows teachers to use the skills they learn in professional development programs

37. If I implement the strategies I have learned this summer in my classroom, I will be recognized for my efforts

38. The nature of my job will not allow me to implement the strategies I have learned in this program

39. The administration is too busy to follow up and/or notice whether I use the strategies I have learned in this program

40. In the future, I will probably receive information from the administrator of my school about the importance of applying the skills I learned in this program to the classroom
Appendix I

Training Reactions Instructions and Items

Please rate your overall experience with RUSMP

1. I liked this program
2. I am glad I attended this program
3. The RUSMP summer program met or exceeded my expectations
4. This program was a waste of time
5. I learned very interesting and useful information during the RUSMP summer program
6. I should never have attended this program
7. I got what I wanted out of this program
8. I now have a greater interest in the approaches taught in this program
9. I did not get anything out of this program
10. The approaches I learned this summer will help assure my job security
11. As a result of participating in RUSMP, I know more about how to perform my job effectively
12. It was important for me to attend this program, but not to really learn the skills presented
13. The skills I learned during the RUSMP summer program will help me receive greater responsibility and/or pay increases
14. The skills I learned during this program will help me if I ever decide to take a job with another school/district
15. This program was not relevant to my job
16. The RUSMP program has increased my confidence in my ability to teach math
Appendix J

Content Knowledge Sample Item (5-7 Class)

1. Farmer Brown wants to make a garden enclosed by a fence. She has a long fence on her property and will use it on one side of the garden. She has 40 meters of fencing to use for the other three sides. Farmer Brown wants the garden to have as large an area as possible. Find the dimensions of the rectangle that will yield the largest possible garden.

2. List five geometrical concepts you can teach using geoboards.
Appendix K

Teaching Philosophy Instructions and Items

Please indicate how strongly you agree or disagree with the following statements

1. In teaching math, my primary goal is to help students master basic computational skills

2. Students should "show their work" when they solve math problems

3. If students are having difficulty in math, a good approach is to give them more practice in the skills they lack

4. If a student is confused in math, the teacher should go over the material again more slowly

5. To do well, students must learn facts, principles, and formulas in mathematics

6. When students can't solve problems, it's usually because they can't remember the right formula or rule