Research Article

WORK MOTIVATION AND SATISFACTION: Light at the End of the Tunnel

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Abstract—*After decades of research it is now possible to offer a coherent, data-based theory of work motivation and job satisfaction. The present model combines aspects of the following theories: goal setting, expectancy, social-cognitive, attribution, job characteristics, equity, and turnover-commitment. The resulting model is called the high performance cycle. It begins with organizational members being faced with high challenge or difficult goals. If high challenge is accompanied by high expectancy of success or self-efficacy, high performance results, given that there is: commitment to the goals, feedback, adequate ability, and low situational constraints. High performance is achieved through four mechanisms, direction of attention and action, effort, persistence, and the development of task strategies and plans. High performance, if rewarding, leads to job satisfaction, which in turn facilitates commitment to the organization and its goals. The model has implications for leadership, self-management, and education.*

Since the turn of the century, industrial-organizational psychologists and their predecessors have been trying to understand the intricacies of employee motivation and satisfaction. Frederick W. Taylor, the founder of "scientific management" (Taylor, 1911/1967), was a pioneer in advocating the use of scientifically designed incentive systems as a means of motivating employees. With the Gilbreths (1914/1973), he developed time and motion study as a method for designing work tasks. In the 1920s, British researchers began to study factors affecting employee fatigue and monotony (Ryan, 1947). In the 1930s the famous Hawthorne studies (Roethlisberger & Dickson, 1939/1956) called attention to the effects of the peer group and supervisors on performance and morale. In this decade that the first, wide-scale attempts to measure job satisfaction quantitatively were made (Hoppock, 1935). Later attention shifted to factors such as participation (Likert, 1961), the attributes of the work itself (Herzberg, Mausner, & Snyderman, 1959), and once again, pay (Lawler, 1971) as methods of enhancing motivation and morale.

Until recently three problems have prevented the development of an integrated model of work motivation and satisfaction. First, no adequate conceptual framework existed for understanding and explaining the motivation to work. Second, there was no clear framework for understanding job satisfaction. Third, and most difficult, was the problem of how to tie motivation and satisfaction together. From the 1950s on, research had shown clearly that the motivation to perform (effort, productivity) and job satisfaction were not strongly associated (Brayfield & Crockett, 1955; Podsakoff & Williams, 1986). In the last two decades, however, there has been sufficient progress in theory and research to make possible the development of a viable model—one that integrates key elements of existing theories of motivation and satisfaction.

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WORK MOTIVATION AND PERFORMANCE

The motivation to work (produce) is best explained by integrating elements of three theories, namely goal setting theory, expectancy theory and social-cognitive theory.

Goal Setting Theory

Goal setting theory (Locke & Latham, 1990a) evolved from the work of the Wurzburg school on intention, task and set, the work of Lewin and his followers on level of aspiration, and the work of Ryan (1970) on intentions. Goal setting theory (Locke & Latham, 1984, 1990) asserts that task performance is regulated directly by the conscious goals that individuals are trying for on the task. Nearly 400 (mostly experimental) studies have shown that specific, difficult goals lead to better performance than specific, easy goals, vague goals such as "do your best," or no goals. These results are based on studies conducted in the U.S. and seven other countries. The studies have used more than 40,000 subjects, 88 different tasks, time spans ranging from one minute to three years, and many different performance criteria, including behavior change, quantity and quality outcomes, and costs. The findings emerge at the levels of the individual, group and organization (Locke & Latham, 1990a).

In order for goals to affect performance, there must be *commitment* to the goals, that is, individuals or groups must be truly trying to attain them (Erez & Zidon, 1984). Generally goal commitment is highest when people think they can attain the goals and when there are values associated with goal attainment (Locke, Latham, & Erez, 1988). Monetary incentives strengthen goal commitment providing people value money, the amount of money is sufficiently large and the incentives are not tied to goals perceived as impossible (Locke & Latham, 1990a). Public commitment appears to be more effective than private commitment (Hollenbeck, Williams, & Klein, 1989). Goal commitment is also affected by role modeling (Earley & Kanfer, 1985) which is a key component of social-cognitive theory (Bandura, 1986).

A surprising finding of research on goal commitment is that assigning goals to individuals generally leads to the same level of commitment and performance as letting individuals participate in the setting of their goals or letting them set their own goals (Latham & Lee, 1986; Locke & Latham, 1990a). Participation is not less effective than most social scientists (including ourselves) assumed it would be; rather assigned goals are more effective than predicted. Assigned goals have a strong influence on personal goals (Garland & Adkinson, 1987). Several factors explain the effectiveness of assigned goals (Locke et al., 1988). First, they are typically assigned by people with legitimate authority (e.g., experimenters, supervisors). Authority figures can have a powerful influence on a subject's or subordinate's compliance (Milgram, 1969; Orne, 1962). Second, the act of assigning a goal to a subordinate implies that the authority figure has confidence that the subordinate can reach the goal; this, in turn, affects the subordinate's self-confidence (Salancik, 1977). Third, assigned goals (if difficult) pose a challenge to people; this motivates them to use the task situation to improve their skills and prove their competence (Mento & Locke, in preparation). Fourth, assigned goals help to define the standards people use to attain self-satisfaction with their performance (Bandura, 1988)—an issue we will return to below. Assigned goals only lead to poorer performance than participatively set goals when the assigned goals are given with brief, curt instructions without any rationale or when there is confounding of participation and other experimental manipulations (Latham, Erez, & Locke, 1988).

Goal setting is more effective, and usually only effective, when *feedback* allows performance to be tracked in relation to one's goals. Goal setting without feedback appears to have little long term effect on performance (Becker, 1978; Strang, Lawrence, & Fowler, 1978). It is important to note, as well, the other side of this coin. Feedback without goals also has little effect on performance. When goal setting in response to feedback is prevented (Locke & Bryan, 1969a), or does not occur (Latham, Mitchell, & Dossett, 1978), feedback does not motivate high performance. (Feedback, of course, can have a cognitive effect on performance if it informs the individual how to perform the task effectively).

The need for goals to supplement feedback is especially obvious in cases where the individual is confronted by multiple types of feedback. Locke and Bryan (1969b), for example, gave individuals information about six different dimensions of their driving performance (e.g., number of steering reversals, number of accelerator reversals, trip time) around a standard course. Goals were assigned for only one dimension and performance improved only on that dimension for which the goal was assigned. This is because goals single out for individuals what is important from the total array of information with which they are confronted. At the same time, goals provide them with a yardstick for determining whether the feedback they are given reveals acceptable or unacceptable performance. Without a goal or standard, people do not appraise feedback as significant and thus do not take action in response to it.

For goal setting to be effective, individuals must have the ability to reach or approach the goals (Locke, 1982). In addition, situational constraints must not inhibit goal attainment (Peters, Chassie, Lindholm, O'Connor, & Kline, 1982).

Expectancy Theory and Social Cognitive Theory

Expectancy theory, based on the work of Atkinson, Lewin, Peak and others, was introduced into industrial-organizational psychology by Vroom (1964). It asserts that performance is a multiplicative function of expectancy (the belief that effort will lead to performance), instrumentality (the belief that performance will lead to rewards) and valance (the perceived value of the rewards or outcomes of performance). The theory predicts that, when instrumentality and valence are held constant, expectancy will be positively associated with performance level. In general, this prediction has been supported. When goals are assigned, expectancy still makes an independent contribution to performance providing that goal difficulty is controlled; that is, within any given goal difficulty level, the association between expectancy and performance is positive (Garland, 1984; Locke, Motowidlo, & Bobko, 1986).

Self-efficacy is a concept in social-cognitive theory which is similar to but broader in meaning than expectancy (Bandura, 1986). Bandura defines self-efficacy as one's judgment of "how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982, p. 122). Self-efficacy includes not only one's estimate of the degree to which effort will pay off but also of one's ability, adaptability, creativity and capacity to perform in the situational context one is in. Self-efficacy, too, is positively associated with performance (Frayne & Latham, 1987; Locke, Frederick, Lee, & Bobko, 1984). The relationship between assigned goals, self-efficacy, personal goals and performance is shown in Figure 1 (based on Locke & Latham, 1990a). Assigned goals affect the individual's personal goals and his or her confidence in being able to perform well. Self-efficacy affects performance both directly and through its effect on personal goals which, in turn, have an independent effect on performance. As noted earlier, self-efficacy also fosters goal commitment. Finally, self-efficacy affects how people respond to feedback. People respond with higher effort in response to negative feedback (indicating that they are not performing up to the level of their goals) if they have high rather than low self-efficacy (Bandura & Cervone, 1986).

It should be noted that the results of goal theory and expectancy theory research contradict Atkinson's (1958) claim that maximum motivational force exists when the probability of success is at .50. Goal theory predicts and the research shows that maximum performance occurs (assuming high commitment and adequate ability) when goals are difficult rather than moderate (Locke, 1968). But within any given goal level that is, with goal level controlled, performance is a positive, linear function of expectancy of success (Locke, et al., 1986). The reason that Atkinson's curvilinear model does not predict performance

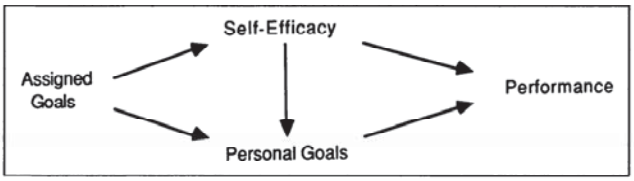

Fig. 1. The relation of goals, self-efficacy and performance.

level correctly (Locke & Latham, 1990a) may be that it fails to specify either what the subject is actually trying to do in the task situation or the subject's degree of self-efficacy.

Challenging goals, in addition to being associated with high self-efficacy, are typically associated with positive instrumentalities. Individuals with high goals, as compared to those with low goals, are more likely to believe that goal pursuit will be associated with a sense of achievement, improvement of one's skills, and the opportunity to prove what one can do (Mento & Locke, in preparation). In real life, of course, more challenging goals are generally associated with more beneficial outcomes than easy goals. For example, students who pursue high grades in school expect that these will have more practical life benefits (e.g., college admission, salary, occupational status, opportunity) than low grades.

More intriguing and less obvious than the relationship between instrumentality and goals is that between valence and goals. If individuals are asked to rate their expected satisfaction with each of a number of possible performance levels, the mean ratings are significantly *lower* for individuals with high goals than for those with low goals. That is, valence and goal level are *negatively* related. The relationship is shown in Figure 2 (from Mento & Locke, in preparation). The figure is based on a study using 118 students who were asked to assume they were trying for one of three grade-point averages (A, B, or C). Forty-three subjects were assigned the goal of A, 39 the goal of B, and 36 the goal of C. Each subject was asked to rate his or her expected satisfaction with each of four possible grade outcomes (A, B, C, or D). Note that the students with a goal of A said they would feel satisfied with an A, but increasingly dissatisfied with grades lower than this. In contrast, the students with a goal of B would feel satisfied with a grade of B, but would be even more delighted with a grade of A. A grade of C would bring dissatisfaction but less dissatisfaction than for those with a goal of A. Those with a goal of C would feel satisfied with a C, even more satisfied with a B, and ecstatic with an A. A grade of D would bring dissatisfaction but not as much as to those with goals of A and B.

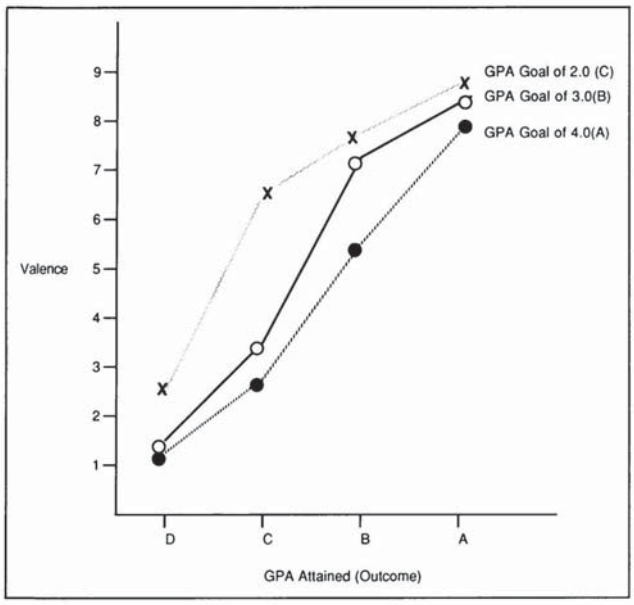

Fig. 2. Expected satisfaction (valence) with GPA outcome as a function of GPA goal (from Mento & Locke, in preparation).

These results may seem paradoxical, but they become clear as soon as one grasps what it means to use goals as standards for judging the adequacy of one's performance (Bandura, 1988). Higher goals mean higher standards for achieving self-satisfaction; that is, a person with higher standards has to accomplish more to feel that he or she has performed adequately or successfully than the person with lower standards. Goals and valences (measured as anticipated satisfaction with various performance levels) are actually two sides of the same coin. One tries for the level of performance one considers adequate. To illustrate this, Mento and Locke (in preparation) developed an alternative goal measure. It was derived by taking as the goal the lowest performance level on a "listing uses" task that the person said he or she would get some satisfaction from attaining (e.g., on a 7-point scale with 4 as the neutral point, the goal would be the lowest performance level rated as a 5). This goal measure correlated .73 ($p < .001$) with a direct report of the individual's goal, and it predicted performance as well as the direct goal measure (both r's = .51, $p < .001$) on a listing uses task.

Mechanisms

The mechanisms by which goals, expectancies and self-efficacy affect performance are relatively well understood. High goals and high self-efficacy lead individuals to *persist* longer at tasks than do low goals and low self-efficacy (Bandura, 1986; LaPorte & Nath, 1976). People with high goals are not satisfied until they reach their goals or get as close to them as they can; people with high self-efficacy persist in the face of difficulty, because they are convinced that they can succeed. High goals and high self-efficacy also lead people to exert more *effort* (work harder) on tasks with time limits (Locke et al., 1984). Duration and intensity of effort are alternative ways of attaining desired objectives. Goals also *direct attention* (Rothkopf & Billington, 1979) and action (Locke & Bryan, 1969b) toward goal relevant action at the expense of actions which will not attain the goal.

Finally, goals affect performance indirectly by stimulating people to *develop plans* to attain their goals (Earley, Wojnaroski, & Prest, 1987; Smith, Locke, & Barry, in press). In three experiments using a complex management simulation task, Wood and Bandura (1989) found that both goals and self-efficacy enhanced the quality of the analytic strategies used by subjects in the simulation. Goals, self-efficacy, and strategies all had independent effects on performance.

Goals may or may not lead to effective task strategies. Generally, goal effects are smaller on complex than on simple tasks (Wood, Mento, & Locke, 1987). On simple tasks, when goals are difficult, effort, persistence and directed attention almost invariably lead to better performance because differences in task strategies do not have a major effect on performance. On complex tasks, the quality of the strategy used is of greater

importance (Wood & Bandura, 1989). On such tasks one has to work smarter as well as harder to perform at a high level.

Goals, expectancies and self efficacy affect performance only on the task, attribute or outcome in question. However, goals may be set for any desired aspect of performance. Performance criteria used in goal setting studies have included: physical effort, speed of reaction, total output, performance quality, production efficiency, time spent on the task, profit, cost, performance appraises and job behavior (Latham & Lee, 1986, Locke & Latham, 1990a). Studies of self-efficacy and expectancy have used an equally wide range of criteria.

REWARDS AND SATISFACTION

After a certain level of performance has been attained, certain consequences may follow in the form of rewards or punishments. To account for affective reactions to rewards and punishments we use goal theory and elements of three additional theories: attribution theory, equity theory, and job characteristics theory. Consequences that correspond to what the individual wants or values produce satisfaction with the job; those that do not correspond to what is wanted or that negate or thwart what is wanted produce dissatisfaction. The degree of satisfaction or dissatisfaction will be a joint function of the degree of fulfillment of the value and the importance of the value to the individual (Locke, 1976; Mobley & Locke, 1970).

Rewards for performance fall into two broad classes, those that are self-administered and those that are administered by others. Self-administered rewards or punishments stem from appraisals which individuals make of themselves by comparing their performance to their internal goals or standards (Bandura, 1986). In goal setting studies, these standards consist of the performance goals assigned by others and accepted, or the goals one has set for oneself.

The most consistent finding here (shown by each separate curve in Fig. 2) is that performance that is successful in relation to a given standard is appraised positively and leads to more self and task satisfaction, pride in performance and sense of achievement than performance that is below standard. This finding is not new. Locke and Latham (1990a) report a mean correlation of .51 between degree of success and satisfaction across 12 studies. Research conducted in the 1930s and 1940s showed that success was defined in relation to one's aspiration level (see Lewin, 1958, for a summary). Locke, Cartledge, and Knerr (1970) found that satisfaction is also experienced when the individual has made progress toward the goal in a multi-trial experiment. Typically the self is credited with successful actions whereas others are blamed for unsuccessful actions (Locke, 1976). Self-attribution produces higher satisfaction when success is achieved than when success is attributed to external factors such as luck according to *attribution theory* (Weiner, 1986).

The finding that goal success produces satisfaction poses a dilemma for those who assign goals to others and even for those who choose their own goals. Clearly easy goals produce more satisfaction than difficult goals (Locke, 1965), both because they are attained more frequently and because they yield a greater degree of satisfaction for any given performance outcome (see Fig. 2). On the other hand, difficult goals produce higher performance than easy goals. Thus, if goals are set at a low level, the individual will be satisfied but unproductive, and if they are set at a high level, the individual will be productive but dissatisfied. There are a number of possible solutions to this dilemma. First, goals could be set at a moderate level so that a moderate degree of both productivity and satisfaction will occur. Second, goals also could be set on a two-tier system; each individual would have a challenging but fully achievable minimum goal (the lowest level that would be satisfactory) and a higher "hope for" or "stretch" goal (the level that would be ideal). This would insure some satisfaction and yet motivate high performance. Third, goal achievement scores could recognize partial success, not just complete success. For example, a hard goal (worth 10 points) that is 80% achieved ($10 \times 0.8 = 8$ points) would get more credit than an easy goal (worth 5 points) and that is 100% achieved ($5 \times 1.0 = 5$ points). Fourth, goals could be made difficult incrementally rather than all at once by constantly raising the goal level (e.g., for quality) above the levels of previous attainment. This principle, called *Kaizen* (meaning "constant improvement"), has been used successfully by the Japanese (Imai, 1986). Finally, goal difficulty could be defined as how much time, thought, effort and resources were required to attain the goal rather than in terms of probability of success. Thus, difficult goals would be ultimately achievable and yet still motivate a high level of performance.

Another factor affecting the degree of satisfaction experienced from goal success or partial success is the nature of the task that is worked on *job characteristics theory,* developed by Hackman and Oldham (1980), argues that greater satisfaction is experienced from work when the task possesses five core attributes: personal significance; variety; feedback; responsibility and autonomy; and identity (i.e., a whole piece of work). Research supports the association of these attributes with work satisfaction (Stone, 1986).

Rewards administered by others following performance can be divided into two sub-categories, those that are *noncontingent* in that they do not depend on how well one has performed (as long as it exceeds some minimum), and those that are *contingent* in that they are given in proportion to how well one has performed.

Typical examples of noncontingent rewards are: fringe benefits, base pay, seniority awards, job security, flexible hours, good equipment, congenial coworkers, pleasant surroundings, and association with a competent, respected organization. Contingent rewards, under a merit system, typically involve: pay raises, promotions, and recognition. With respect to both categories of rewards, *equity theory* (Adams, 1965) argues that people appraise rewards in terms of their fairness. Equity is calculated by an individual comparing his or her outputs (rewards) in relation to inputs (seniority, performance) to the output–input ratio of other people with similar tasks or jobs, inside and/or outside the organization. Inequitable rewards lead to dissatisfaction and attempts to restore equity through such means as modifying performance quantity or quality or direct protest. In addition to equity norms, people also have personal opinions or standards as to what rewards are desirable and appropriate. These personal values as well as specific conceptions of equity may differ from person to person (Locke & Henne, 1986).

Employees who feel successful in relation to goals at work that possesses the five core attributes, who are rewarded equitably by the organization for their high performance and who receive equitable noncontingent rewards will generally feel satisfaction with their job as a whole (see Locke, 1976, for a fuller discussion of the determinants of job satisfaction). Employees who feel unsuccessful and feel that their rewards are inequitable or inadequate will feel dissatisfied with their jobs.

COMMITMENT TO THE ORGANIZATION

The next question to ask, and the one that has most puzzled industrial-organizational psychologists, is what occurs as a result of the employee being satisfied or dissatisfied? As noted earlier, satisfaction exerts no consistent or inevitable effects on performance. It has been shown that when performance is contingently rewarded satisfaction will typically result from performance. But this does not answer the question: what does satisfaction, in turn, lead to? Recent theoretical (Henne & Locke, 1985) and empirical (Fisher & Locke, in press) work has revealed that being satisfied or dissatisfied with the job can lead to a variety of different actions. Employees who are satisfied are more likely to stay on the job and to engage in citizenship behaviors such as helping coworkers or customers and doing extra work (Organ, 1987); those who are dissatisfied are more likely to quit the job, be absent, file grievances, join unions, go on strike, protest to higher management, engage in substance abuse and illegal acts, and put forth less effort (Fisher & Locke, in press).

Of all the above actions, however, staying on or quitting the job seems to be most consistently related to degree of job satisfaction (Mobley, 1982), although actual quitting is mediated by forming an actual intention to leave. Satisfaction tends also to be consistently and strongly related to subjective reports of organizational commitment (Lee & Mowday, 1987; Williams & Hazer, 1986). Locke and Latham (1990a) reported a mean correlation of .64 between satisfaction and commitment in 11 studies. Mowday, Porter, and Steers (1982) defined organizational commitment as: (a) the acceptance of the goals and values of the organization; (b) willingness to exert effort on behalf of the organization; and (c) a desire to stay with the organization.

If satisfaction promotes commitment, it means that satisfied people will be more likely than dissatisfied people to both remain with the organization and to accept any new challenges that it might offer. High challenge, in turn, will produce high performance.

THE HIGH PERFORMANCE CYCLE

The foregoing model, starting with high goals and self-efficacy producing high performance, which in turn leads to rewards, satisfaction and commitment to future goals, we have previously termed "the high performance cycle" (Locke & Latham, 1990b). This cycle is summarized in Figure 3.

We have not attempted to specify any time span for the cycle shown in Figure 3; parts of it may be repeated on a daily basis. Mowday et al. (1982) found that several months may pass before lowered commitment leads to actually quitting the job. Quitting of course, depends on factors other than satisfaction including the availability of other jobs.

While the present model is based primarily on data from experimental laboratory and field studies (and in the case of the satisfaction data, both experimental and correlational studies), by coincidence the model is quite similar to one developed to-

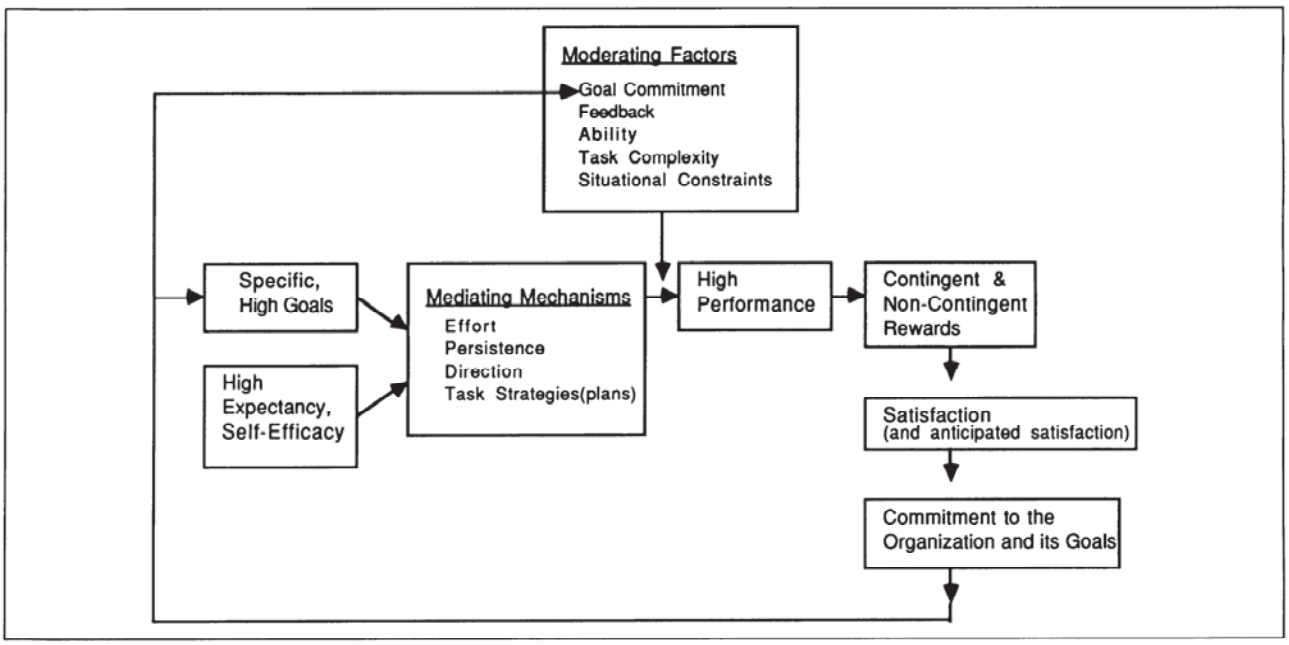

Fig. 3. The high performance cycle.

tally independently by Katzell and Thompson (1987). Katzell and Thompson's model is based solely on correlational data obtained from field studies in organizations. The similarity of the two models suggests a genuine convergence of evidence and a strong consensus as to the factors that produce, at least at the micro level, an effective and successful organization.

Our model, moreover, reveals why scores of previous studies have failed to find a consistent or meaningful association between job satisfaction and productivity. *The effects of satisfaction on subsequent performance are indirect and contingent rather than direct.* Only if satisfaction leads to commitment to the organization and to its goals and only if those goals are challenging and accompanied by a high self-efficacy will subsequent high performance result. Furthermore, commitment is dependent on the anticipation of future rewards; such anticipation is based both on past rewards and on one's judgment of how the situation will change (Bandura, 1986; Locke et al., 1970).

CONCLUSIONS AND IMPLICATIONS

Leadership was not discussed explicitly as part of the high performance cycle but clearly leaders play a major role in creating and maintaining the cycle. A number of recent studies of effective leaders and high level managers have found that one of their most important functions is the development of a vision or overarching goal for their organizations (Bennis & Nanus, 1985; Bradford & Cohen, 1984) and translating this vision into explicit goals, agendas and plans (Kotter, 1982; Locke & Somers, 1987). Effective leaders also take pains to reward those who help the organization to attain its goals and punish those who do not (Peters & Waterman, 1982).

The usefulness of the high performance cycle, we believe, goes beyond the confines of work organizations. The basic ideas are also applicable, for example, to the process of self-management that has been shown to be effective in clinical as well as work settings (Frayne & Latham, 1987; Kanfer, 1970; Latham & Frayne, 1989). Self-management procedures involve setting a goal for what one wants to accomplish, measuring progress toward the goal, developing strategies to attain it, and rewarding oneself for success. Satisfaction and self-efficacy increase as one succeeds in attaining proximal goals and this in turn increases commitment to the program.

Another application of this model is to the field of education. It is widely recognized that, among the major industrial nations, American students are among the worst-educated, not only with respect to basic skills like mathematics but even with respect to knowing basic facts such as where the major countries of the world are on a map. Studies of in-school and out-of-school activities of U.S., Japanese, and Taiwanese students reveal that American students: spend less time in class doing actual work, spend less time taking core courses such as mathematics, have a shorter work day and a shorter work week, have a shorter academic year and have less homework (Stevenson, Lee, & Stigler, 1986). In other words, much less is demanded of the American students. In view of our model, it is not surprising that they learn a lot less than their Asian counterparts.

The near illiteracy of many of our high school graduates and nongraduates, and sometimes even college graduates, makes them virtually unemployable. Even those employed lack so many skills that it puts our organizations at a severe competitive disadvantage in the world marketplace. Perhaps more than any other institution in our society, our educational system needs to introduce the high performance cycle. The first step in introducing the cycle would be to demand more of our students, starting in elementary school. Teachers also need to persuade students that they are capable of accomplishing more than they are now accomplishing (Collins & Tamarkin, 1982) and to train students to use effective learning strategies. Constructive feedback needs to be provided showing progress in relation to goals and regarding the effectiveness of the learning strategies used. Increasing success in learning will enable students to feel more efficacious and to take greater pride in their performance. This, in turn will make them more committed to school and to learning. The ultimate extrinsic reward will be greater success in the job market and in life.

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