GOAL THEORY, MOTIVATION, AND SCHOOL ACHIEVEMENT: An Integrative Review

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Key Words   self-worth, school reform, self-processes, self-protective mechanisms

■ **Abstract**   The purpose of this review is to document the directions and recent progress in our understanding of the motivational dynamics of school achievement. Based on the accumulating research it is concluded that the quality of student learning as well as the will to continue learning depends closely on an interaction between the kinds of social and academic goals students bring to the classroom, the motivating properties of these goals and prevailing classroom reward structures. Implications for school reform that follow uniquely from a motivational and goal-theory perspective are also explored.

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INTRODUCTION

The concept of motivation stands at the center of the educational enterprise. Terrel Bell, former Secretary of Education, put the point emphatically: ''There are three things to remember about education. The first is motivation. The second one is motivation. The third one is motivation'' (Maehr & Meyer 1997:372).

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This review examines the directions and recent progress in our understanding of the motivational dynamics of school achievement. As we will see, it is the interaction between (*a*) the kinds of social and academic goals that students bring to the classroom, (*b*) the motivating properties of these goals, and (*c*) the prevailing classroom reward structures that jointly influence the amount and quality of student learning, as well as the will to continue learning.

Taken in its entirety, the substantial body of research reviewed here provides a relatively complete picture of the motivational dynamics of school achievement. For this reason, this review is more an unfolding narrative than a comprehensive cataloguing of numerous individual studies—a narrative broad in scope, with many intertwining themes, that ultimately provides for an overall cohesiveness. The fact that such a story can now be told is a tribute to the tireless, cumulative efforts of hundreds of investigators, many of whom are cited here. This is by no means to suggest, however, that the story is complete. Much has yet to be learned. But we understand enough to recognize gaps in our knowledge and what research steps need be taken next.

Basically, our inquiries are placed in a historical perspective around the distinction between motive-as-drives and motives-as-goals (Kelly 1955). The first section reviews research inspired by goal theory and in particular the evidence for the proposition that, depending on their purposes, achievement goals differentially influence school achievement and the will to learn via cognitive, self-regulation mechanisms.

The second section examines the motivational properties of these achievement goals from a drive-theory perspective. This allows us to account for otherwise puzzling behaviors not easily explained by strictly cognitive, goal-directed interpretations. For example, if the highest goal of many students is to achieve the best grades possible, then why do some of them sabotage their chances for success by procrastinating in their studies, or by setting unrealistically high goals that doom them to failure?

The third section examines how achievement goals are influenced by classroom incentive systems, either to the benefit or to the detriment of achievement. More specifically, two incentive systems that have commanded the attention of researchers over the past several decades are considered. The first system assumes that students are optimally motivated by there being fewer rewards than there are players in the learning game, i.e. turning students into competitors for recognition and further advancement. This model derives much of its justification from the view of motives-as-drives, which typically considers motivation an enabling factor, i.e. the means to superior performance. This scarcity of rewards disrupts learning by encouraging negative achievement goals, such as avoiding failure, rather than positive goals, such as striving for success. Special attention is given to the particularly devastating impact of reward scarcity on disenfranchised students and students of color, as well as on teachers themselves.

The second broad incentive system that has recently attracted considerable interest, largely as an alternative to the competitive model, assumes that motivation is optimal when there exists an abundance of payoffs for learning, and payoffs of many kinds, not just tangible, extrinsic rewards like grades or gold stars but also intrinsic sources

of satisfaction, as well as a variety of ways in which to earn these rewards, ways suited to individual learning styles. This model reflects an emphasis on motives-as-goals that draw, not drive, individuals toward action, and generally for ennobling reasons: for the sake of curiosity, exploration, and self-improvement. We consider the evidence for how reward systems inspired by goal theory can encourage both prosocial and positive academic goals.

Finally, I end with some implications for school reform that follow uniquely from a motivational and goal-theory perspective and identify some future directions for research.

Motives as Drives

Over the past half century, two broadly different conceptions of achievement motivation have emerged. First came the perspective that views motivation as a drive, i.e. an internal state, need, or condition that impels individuals toward action. In this tradition needs were thought to reside largely within the individual, such that they were spoken of as being trait-like. These drive notions evolved from earlier theories of motivation that emphasized the satisfaction of such basic tissue needs as hunger and thirst (e.g. Woodworth 1918). However, because of the limitations of applying a strictly physiological approach to understanding human behavior, researchers eventually broadened their focus to postulate learned drives or such psychological motives as the needs for social approval, power, and achievement.

The most sophisticated view of achievement motivation as a learned drive was developed in the 1950s and early 1960s by Atkinson (1957, 1964) and McClelland (1961). This theory held that achievement is the result of an emotional conflict between striving for success and avoiding failure. These two motivational dispositions were characterized largely in emotional terms. For example, hope for success and the anticipation of pride at winning or prevailing over others was said to encourage success-oriented individuals to strive for excellence. On the other hand, a capacity for experiencing shame was thought to drive failure-oriented persons to avoid situations where they believed themselves likely to fail. It was the balance—or more aptly the imbalance—between these two factors that was believed to determine the direction, intensity, and quality of achievement behavior. For example, failure-avoiding individuals were thought likely to avoid all but the simplest tasks, unless extrinsic incentives such as money or the threat of punishment were introduced to overcome their resistance. In effect, it was this difference in emotional reactions (pride vs shame) that was thought to answer the question of why some individuals approach learning with enthusiasm and others only with reluctance, and why some choose easy tasks for which success is assured and others tackle problems for which the likelihood of success is exquisitely balanced against the chances of failure.

Motives as Goals

Over the years, this approach/avoidance distinction has undergone significant modifications, especially with the rise of the alternative view of motives-as-goals that entice individuals toward action (e.g. Elliott & Dweck 1988). Researchers in this

tradition assume that all actions are given meaning, direction, and purpose by the goals that individuals seek out, and that the quality and intensity of behavior will change as these goals change. Obviously, this drive/goal distinction is somewhat arbitrary, i.e. the same achievement behavior can often be construed as either satisfying a need or the result of pursuing a goal. In this sense, neither view discounts the validity of the other; rather they are complementary and each is additive to our understanding. For instance, goal theory leaves largely unaddressed the question of why individuals choose one goal over another, an issue that remains a central focus of need-achievement theory. On the other hand, goal theory offers a practical surrogate for a concept—motivation—whose nature is not yet fully understood and for which many differing perspectives have been put forward over the years (for a historical review, see Maehr & Meyer 1997). By rewarding some goals and not others, teachers can change the reasons students learn, which is to say change their motives. Thus, by this analysis, we need not await final, all-encompassing definitions or ultimate clarification before taking eminently practical steps to solve more immediate, pressing problems that are basically motivational in nature.

ACHIEVEMENT GOAL THEORY

Academic Goals

The most recent embodiment of the motives-as-goals tradition is achievement goal theory (e.g. Ames 1992, Dweck 1986, Urdan 1997, Urdan & Maehr 1995). The basic contention of achievement goal theory is that depending on their subjective purposes, achievement goals differentially influence school achievement via variations in the quality of cognitive self-regulation processes. Cognitive self-regulation refers to students being actively engaged in their own learning, including analyzing the demands of school assignments, planning for and mobilizing their resources to meet these demands, and monitoring their progress toward completion of assignments (Pintrich 1999, Zimmerman 1990, Zimmerman et al 1994). In effect, then, one's achievement goals are thought to influence the quality, timing, and appropriateness of cognitive strategies that, in turn, control the quality of one's accomplishments.

Two general kinds of goals that closely follow the original approach/avoidance designation of need theory have been made a particular focus of study: learning goals and performance goals, respectively. Although researchers have favored different designations for learning goals, such as task-goals (Anderman & Midgley 1997, Kaplan & Midgley 1997, Midgley et al 1998, Nicholls 1984) or mastery goals (Ames 1992, Roberts 1992), there is general agreement that irrespective of these variations, learning goals refer to increasing one's competency, understanding, and appreciation for what is being learned. Likewise, there is general agreement that performance goals, whether referred to as ego-goals (Nicholls 1989, Thorkildsen & Nicholls 1998) or self-enhancing goals (Skaalvik 1997), involve outperforming others as a means to aggrandize one's ability status at the expense of peers.

The specific hypothesis put forward by achievement goal theorists is twofold: first, that learning goals favor deep-level, strategic-processing of information, which in turn leads to increased school achievement; and second, that performance goals trigger superficial, rote-level processing that exerts a stultifying influence on achievement. These twin hypotheses have stimulated a considerable body of research in recent years, the bulk of which examines one link at a time in the proposed trichotomous sequence, with a few studies testing the entire sequence simultaneously (e.g. goals → cognitions → achievement).

Goals → Cognitions   First, consider briefly the evidence for the first link of this proposed causal sequence, namely that achievement goals influence the quality of self-regulated learning exhibited by students.

Regarding learning goals, both correlational and laboratory studies indicate that students who espouse a learning-goal orientation report engaging in more self-regulated learning than do those students who endorse these same learning goals but to a lesser degree (Ames 1992, Dweck & Leggett 1988, Pintrich & De Groot 1990, Pintrich & Schrauben 1992). These differences in self-regulation include a greater effort among learning-oriented students (*a*) to monitor their understanding of what is being learned—in short, recognizing when they know something sufficient to the demands of the task and when they do not (Meece & Holt 1993, Middleton & Midgley 1997), (*b*) to employ organizing strategies such as paraphrasing and summarizing (Archer 1994), and (*c*) to make positive, adaptive attributions for one's occasional failures to understand. In this latter connection, learning-oriented students tend to believe that effort is the key to success and that failure, despite trying hard, does not necessarily imply incompetence but simply not having employed the right learning strategies (Nicholls 1984, Pintrich & Schunk 1996). The benefits of adopting a learning orientation also extend to affective reactions. For example, learning goals are positively associated with pride and satisfaction in success and negatively associated with anxiety in the event of failure (Ames 1992, Jagacinski & Nicholls 1984, 1987).

The evidence concerning the presumed relationship between adopting performance goals and the quality of self-regulated learning is more complex and less consistent than that just summarized for learning goals (for commentary, see Harackiewicz et al 1998). Although researchers have generally reported that performance goals are positively associated with superficial, rote rehearsal strategies and are unrelated or negatively associated with deep-level processing (e.g. Karabenick & Collins-Eaglin 1997, Pintrich et al 1993), it is also true that no clear pattern has emerged from those studies exploring the association between performance goals and either task persistence (e.g. Bouffard et al 1995, Pintrich et al 1993) or the degree of effort extended (e.g. MacIver et al 1991, Wentzel 1996). This failure to confirm the expectation that effort level and persistence are negatively associated with performance goals likely occurs because, initially, researchers did not distinguish, as some subsequently have (e.g. Elliot & Harackiewicz 1996), between performance/approach goals and performance/avoidance goals. When performance goals are properly parsed

into their respective approach and avoidance components, the evidence suggests that those performance-oriented students who approach success invest considerable effort in highly sophisticated study strategies, which is not surprising given their goal of outperforming others (Wolters et al 1996). By contrast, performance-oriented subjects whose goal is to avoid failure reflect a pattern of reduced effort and task persistence (Bouffard et al 1995). By not trying, this latter group is thought to create face-saving excuses for having done poorly (Pintrich 1999).

Thus, from a self-protective point of view, performance-oriented students, whether approach or avoidant, are driven by fears of incompetency, with the former group striving to avoid failure by succeeding and the latter group setting up failures when necessary, but in ways that deflect the implication that they are incompetent.

Cognitions → Achievement   Does the quality of different cognitive processing strategies translate into different achievement outcomes, thus confirming the final link in the trichotomous goal theory framework? The available evidence also supports this contention. A number of studies conducted in the years prior to the advent of goal theory had already established a convincing case for deep-level processing as the optimal condition for achievement in a variety of subject-matter areas, including English composition and science (for a review, see Covington 1992). Moreover, recent anecdotal observations provide indirect corroboration for these linkages. For example, Borkowski & Thorpe (1994) report that underachieving students are impulsive and inaccurate in their self judgements regarding prior knowledge of a topic to be learned and in judging their own capacities, given specific task demands. Conversely, academically successful minority high school students demonstrate a greater degree of self-regulation and willingness to persist on task than their less-successful peers (CR Wibrowski 1992).

Cultural variations in the cognitive, self-regulation element of this trichotomous sequence have also been reported. For instance, Purdie & Hattie (1996) found that compared with Anglo high school students, native Japanese favor memorizing and rote rehearsal strategies when studying and, incidentally, rely on feelings of obligation to others as the primary motivating imperative (see also Rosenthal & Feldman 1991). By contrast, Anglo students are more likely to favor self-testing as a means to assess their level of understanding, as well as to create plans and goals for both motivating and organizing their studies. As to the cognition/achievement linkage itself, the highest achievers in both the Anglo and Japanese groups tended to employ all the above-mentioned strategies—in effect, studying in more-complex ways—compared with the study practices of the low achievers in both groups.

Goals → Cognitions → Achievement   Several multiple-regression studies have confirmed the entirety of this trichotomous framework. Elliot et al (1999) report that the presence of performance/avoidance goals was associated with superficial processing and disorganizing tendencies (i.e. inefficient use of study time), factors that in turn were linked to decreases in subsequent academic performance. It is interesting to note that adopting a performance/approach goal also was associated with superficial

processing, but in this case inefficiency was offset by a tendency for extra rehearsal so that the net effect was a gain in performance. By contrast, adopting learning goals was positively associated with deep-level processing, persistence, and high effort, a combination that also led to increases in achievement. Parenthetically, achievement gains were equal for both learning-oriented and performance/approach students (also see Elliot & Harackiewicz 1996), which suggests that achievement per se, even superior performances, may be less important to the larger objectives of schooling than the means by which superior status is achieved. More specifically, successful achievement driven by fear can make learning an ordeal, no matter how well one does academically.

Several other investigations corroborate the Elliot et al (1999) study by confirming a direct association between student goals on the one hand and academic outcomes on the other (e.g. Meece & Holt 1993, Pokay & Blumenfeld 1990). Perhaps most noteworthy for establishing causal, not merely correlational, relationships is a study reported by Schunk (1996) in which young children who were directed to work under a learning-goal set demonstrated greater task involvement and greater subsequent achievement than children who worked under a performance-goal set. In an additional series of studies, Roney et al (1995) manipulated approach and avoidance orientations with college students by inviting some to focus on the specific number of anagram problems they would try to solve (approach) and others to estimate the number they would be unable to solve (avoidance). Subjects operating under an approach set performed better and were more persistent in working on unsolvable anagrams. Similar differences have been produced by other investigators using a variety of approach/ avoidance primers, including solving problems while imagining either positive or negative selves (Ruvolo & Markus 1992) or operating under a self-initiated vs an obligatory achievement set (Roney & Sorrentino 1995).

Little is known about the ethnic and cultural correlates of the trichotomous goal-theory framework. To date, most research has focused on ethnic variations in achievement attributions. Basically, Asian youngsters, in particular Chinese Americans (Hess et al 1987, Whang & Hancock 1994) and native Japanese (Hamilton et al 1989), tend to attribute their successes to trying hard and their failures to lack of effort whereas Anglo American students tend to divide their attributional explanations more evenly between good luck, ability, and effort (for a review, see Holloway 1988). Similar patterns favoring effort attributions for achievement have also been found among native-born Mexicans (Snyder 1994).

Although attributional mechanisms are clearly implicated in the pursuit of achievement goals, they are not the same as goals. One of the few investigations concerned with the compound relationship between academic goals, ethnicity and school achievement involved comparisons among Anglo, Aboriginal (Australian), and Native American (Navaho) high school students (McInerney et al 1997). The findings generally corroborated the previously cited work in that learning goals were positively associated with school grades, whereas performance goals were essentially uncorrelated with grades. Most important was the fact that this pattern was common to all three ethnic groups. It would appear that diverse ethnic groups may be more similar

than different, perhaps not only in their preferred goals but also in the causal impact of these goals on academic achievement.

In summary, the accumulated evidence overwhelmingly favors the goal-theory hypothesis that different reasons for achieving, nominally approach and avoidance, influence the quality of achievement striving via self-regulation mechanisms. Although much remains to be learned about these relationships, especially regarding potential ethnic and gender variations, this trichotomous framework nonetheless provides the basis for a rapprochement with motivational issues (see below). Moreover, this framework openly invites a consideration of additional goals, which typically have not been considered part of traditional academic achievement. It is to this point that we now turn.

Prosocial Goals

The bulk of research inspired by achievement goal theory has focused on academic outcomes. A separate line of inquiry with different origins and emphases, but that will almost certainly contribute to a deeper understanding of academic achievement, focuses on the interpersonal world of students and on the expression of social goals, including peer acceptance and respectability. From the time that McClelland (1955) and others (e.g. Veroff 1969) first identified the need for approval as an important social motivator in the drive-theory tradition, investigators have recognized a broad range of social concerns and behaviors as important aspects of school-related motivation, including the willingness to cooperate, to comply with rules, and to help others.

Recently, investigators have located the need to achieve a sense of belonging, integrity, and the respect of others in the larger context of goal theory (e.g. Farmer et al 1991). Such prosocial goals as gaining acceptance share much in common with academic goals (Schneider et al 1996). Like academic goals, the pursuit of social goals can help organize, direct, and empower individuals to achieve more fully. For example, the desire of individuals to achieve for the sake of the group is a well-known phenomenon, and it forms the basis for much of the success of cooperative learning (Hertiz-Lazarowitz et al 1992). Moreover, like many academic goals, especially those associated with intrinsic curiosity and creative expression, prosocial goals are also valued in their own right, apart from any justification that they may contribute to academic success. This valuation is part of the larger commitment of American schools to encourage moral character and social responsibility among upcoming generations.

Currently, our understanding of how the pursuit of social goals fits into the larger dynamics of classroom achievement is not nearly as advanced as our understanding of the role of academic goals in this regard. Nonetheless, the prosocial literature appears sufficiently developed to support several generalizations proposed by Wentzel (1996) and others (e.g. Wentzel & Wigfield 1998).

First, it is clear that the pursuit of such social goals as making friends and being responsible to others is given high priority by children of virtually all ages (Allen

1986, Ford 1992), often even higher than the pursuit of academic goals (Wentzel 1991a, 1992).

Second, the pursuit of these prosocial goals is closely related to students being liked and respected by their peers (Wentzel 1994). Conversely, students who are identified by their peers as being less well-liked report trying to achieve these same prosocial goals less often. Teachers, too, are judged in much the same manner. According to Wentzel (1996), teachers who are well liked by students are rated as willing to treat children's ideas with respect, to give of their time and resources unstintingly, and to provide positive encouragement and feedback.

Third, prosocial behavior including being cooperative, compliant, and willing to share is positively associated with academic success (Wentzel 1989, 1991b, 1993). The reasons for this relationship are not entirely clear, except to say that, motivationally speaking, both prosocial goals and academic achievement are intimately linked. One possible moderator involves level of academic effort. For example, tutoring others is not only a valued expression of prosocial cooperation, but the benefits to the tutor of consolidating his/her own understanding of the subject matter in the process also bode well for subsequent achievement. Wentzel (1996) found indirect support for the prosocial/effort portion of this potential linkage with achievement in a study of seventh-grade English classes. The amount of time students spent on their homework (effort) depended on the degree to which they endorsed socially responsible goals, such as helping peers understand their assignments. Longitudinal analyses of the same data also indicated that increases in effort levels from the sixth-grade to eight-grade depended not only on the degree to which students pursued social goals within that time period, but also on the pursuit of learning goals as well.

This latter finding serves to illustrate a fourth and final point: Not only do prosocial goals likely influence achievement in their own right, but as was just implied by the Wentzel study, they also likely act jointly with academic goals to influence achievement. At the moment, the precise nature of such a complex causal network of goals is not well understood, and interest in this possibility has far outrun the available evidence (see Wentzel 1993, Wentzel & Wigfield 1998). Whatever the dynamics eventually prove to be, however, varying combinations of goals will likely exert negative as well as positive influences on academic achievement. For instance, whether the willingness to share becomes a positive factor in the achievement equation will almost certainly depend on which academic goals predominate. As only one example, Wentzel (1996) reports that the tendency of students to pursue social goals, like sharing, is positively related to learning goals but not to performance goals. This finding likely reflects the fact that by their very nature, learning goals—exploring, experimenting, and discovering—depend heavily on the acquiescence, if not the active cooperation, of others whereas the main objective of performance goals— doing better than others—is patently contrary to positive social values, involving as they do sabotage, deception, and a reluctance to cooperate (Covington 1992).

Other academic/social goal combinations will likely act in positive, compensatory ways, such as when, for example, an otherwise boring subject matter is mastered merely for the social value of doing so. And finally, there is the possibility of a direct

conflict between social and academic goals that present painful dilemmas for young-sters and, in the process, bode ill for the successful pursuit of any academic goals to which they might aspire. A classic example involves the special dilemma for many minority students who must accept dominant Anglo achievement values (e.g. com-petition, autonomy, independence) sufficiently to do well in school but not enough to incur the wrath of their minority peers and family as betrayers of their cultural heritage (Arroyo & Zigler 1995, Fordham & Ogbu 1986; but see Bergin & Cooks 1995, Collins-Eaglin & Karabenick 1993).

Not only will the impact on achievement likely depend on the composition of various multiple-goal alliances, but teachers will also certainly emerge as key mod-erators of these dynamics (Perry & Weinstein 1998). A few recent findings attest to this point. For instance, the willingness of students to form a consensus around the goals of doing well and helping peers academically depends on their perceptions that teachers care about them both as persons and students (Feldlaufer et al 1988, Good-enow 1993, Harter 1996, Wentzel 1995); conversely, when students perceive teachers as having failed to provide support, they feel no obligation to behave in socially responsible ways, nor do they particularly enjoy school (Dray et al 1999). Of special interest is the fact that perceptions of teacher support are positively associated with instructional techniques that feature mastery and learning goals and frequent displays of feedback (Wentzel 1995). Clearly, then, the quality of the student/teacher relation-ship depends not only on the personal actions of teachers, but also on the instructional climate in which these actions occur (see below).

SELF-PROCESSES

Research inspired by goal theory has substantially advanced our understanding of classroom achievement dynamics. In essence, it is now clear that the quality of self-regulation forms an essential link between academic goals on the one hand and the quality of achievement behavior on the other. And the stage is set for further reve-lations with the inclusion of prosocial goals in the on-going study of multiple-goal influences on achievement. Yet despite these advances, we are left wondering about the larger motivating function of these goals. Although achievement goals organize behavior via self-regulation mechanisms, thereby addressing the sustaining function of motives, what about the arousal and selection functions of motives? Why, for example, do individuals choose to pursue some goals and not others, and pursue the chosen goals with different degrees of energy? And what of the adaptive function of motives? If the highest goal of most students is to get the best grades possible, as appears to be the case (Covington & Wiedenhaupt 1997), then why do some of them sabotage their chances by procrastinating in their studies or setting unrealistically high goals that doom them to failure?

These questions imply that achievement goals may serve more fundamental adap-tive, even survival, functions than has previously been acknowledged by goal theo-rists. However, perspectives are changing rapidly. Within the past decade there has been a growing recognition that neither motivational nor cognitive models by them-

selves can fully describe all aspects of academic achievement (see especially Garcia & Pintrich 1994, Graham & Golan 1991). Several approaches to establishing a theoretical rapport between a cognitive agenda and motivational concerns have been advanced. Some investigators have suggested infusing achievement goals with self-motivating processes (Kluger & De Nisi 1996, Maehr 1998, Roeser et al 1996), including internalized self-talk to help monitor and sustain long-term task engagement (R Butler, MV Covington & S Wiedenhaupt, unpublished data). Other researchers propose conceptualizing goal orientations as highly personal in nature, i.e. based on stable, trait-like dispositions rather than being treated as more situated reactions that are subject to prevailing environmental demands (Emmons 1986, Pintrich 1999). The treatment of achievement goals as enduring, adaptive drives has remained a central emphasis in the need-achievement tradition. The most recent expression of this focus was the advent of the self-worth theory.

Self-Worth Theory

The self-worth theory (Covington 1992, 1998; Covington & Beery 1976) assumes that the achievement goals adopted by students, whether learning oriented or performance oriented, reflect a Promethean, life-spanning struggle to establish and maintain a sense of worth and belonging in a society that values competency and doing well. In effect, in our society individuals are widely considered to be only as worthy as their ability to achieve. For these reasons, the kinds of grades students achieve are the unmistakable measure by which many, if not most, youngsters judge their worth as students.

Yet although a grade focus dominates, it is the way students define success that is the all-important factor by which self-esteem mechanisms operate to affect achievement. For example, those students previously described as success-oriented (Atkinson 1957; Covington 1992) define success in terms of becoming the best they can be, irrespective of the accomplishments of others. They also value pushing the envelope of their current skills and understanding through diligence and hard work. Success-oriented students value ability as much as do others, but as a tool or resource to achieve personally meaningful goals. By contrast, other students value ability as a matter of status, which means defining competency in terms of doing better than others academically, and in the process they are often forced to avoid failure, or at least avoid the implications of failure, i.e. that they are incompetent, because the rules of competition dictate that only a few can succeed. The failure-avoiding tactics involved here have many guises, but whatever their form or character, they are all linked to the fear of failure, which is to say they are part of the defensive repertoire of those individuals who tie their sense of worth to grades and as a result are dominated by performance goals (Fried-Buchalter 1992, Thompson et al 1998).

Self-Protective Mechanisms

The past decade has witnessed a renewal of interest in the nature and consequences of these defensive strategies, which have been divided into three conceptually related categories (Thompson 1993, 1994): (*a*) self-worth protection, (*b*) self-handicapping strategies, and (*c*) defensive pessimism.

Self-worth protection describes a general strategy of withholding effort when risking failure so that the perceived causes of failure, should failure occur, remain ambiguous owing to the possibility that not trying is the culprit rather than incompetency (Mayerson & Rhodewalt 1988, Rhodewalt et al 1991, Thompson et al 1995). From this defensive perspective, not trying becomes a virtue for failure-threatened students, even though inaction is typically reprimanded by teachers (Weiner & Kukla 1970). Thus effort becomes a double-edged sword: valued by students because teachers reward it, yet also feared by students for its potential threat to their sense of worth when anticipating failure (Covington 1998).

Self-handicapping behavior involves the creation of some impediment to one's performance—either imagined or real—so that the individual has a ready excuse for potential failure. This strategy encompasses a wealth of specific tactics, including procrastination (McCown & Johnson 1991) and establishing unrealistically high achievement goals (Covington 1992). By studying only at the last moment, one's failures can hardly be blamed on inability, and if procrastinators should do well, they will appear highly able, because they have succeeded with so little effort. Likewise, individuals may handicap themselves by striving for unattainable goals, but such a failure would not reflect significantly on their ability, since under the circumstances no one else could be expected to succeed either. At other times, students may attempt to maintain a sense of worth by merely stating a worthy goal, e.g. announcing that they will do better on the next test—even if that is unlikely. Here individuals attempt to compensate for failure with an alternative source of gratification. In this case, however, the person has substituted fantasies for actual accomplishments. From the vantage point of self-protective dynamics, such irrational goal setting becomes a reasonable, even logical and self-justified, response to situations in which one is required to perform, but in which the likelihood of success is low and failure abrasive.

A third distinctive strategy involves defensive pessimism, in which individuals maintain unrealistically low expectations for ever succeeding or discount the importance of an assignment, all in an effort to minimize feelings of anxiety that might otherwise overwhelm their studies if they took an assignment seriously (Cantor & Harlow 1994, Cantor & Norem 1989, Norem & Illingworth 1993; AJ Martin 1998).

The accumulated evidence suggests that although strategies such as claiming a handicap for one's failure may afford short-term protection from feelings of diminished self-esteem (Isleib et al 1988, Rhodewalt et al 1991), substantial long-term costs are also likely to be extracted, especially when avoidance strategies become habitual and are incorporated into the individuals characteristic mode of achievement for extended periods of time. Ultimately, these costs translate into diminished achievement (Rhodewalt 1990; AJ Martin 1998). This diminution takes many forms, including achieving inconsistently, i.e. sometimes performing well and at other times poorly, depending on how likely failure is perceived to be the outcome (Thompson 1993). Diminished achievement in turn is likely to be accompanied by heightened anxiety. For example, procrastinators with high neuroticism scores and elements of perfectionism find that studying actually increases their anxiety rather than reducing it (McCown & Johnson 1991). Emotional exhaustion and eventually burnout are

also frequently cited consequences of the excessive use of these failure-avoiding strategies, as well as reduced interest in achieving (Higgins & Berglas 1990, Thompson 1994, Topping & Kimmel 1985).

Defensive posturing is more likely to occur among males than females, and these gender differences emerge in the earliest years of schooling. For example, Craske (1988) reported that primary grade boys are more likely than girls to withdraw from difficult tasks or not to try following failure. Miller (1986) has also found similar patterns among middle-school boys. Furthermore, Urdan et al (1998) report excessive handicapping among boys in the upper-elementary grades, behaviors that are associated with a diminished grade-point average.

Developmental Dynamics

Research inspired by the drive-theory tradition has demonstrated a clear relationship between child-rearing practices and the characteristic ways that individuals resolve the inherent conflict implied in the approach/avoidance distinction. In brief, early pioneering studies established that the parents of success-oriented youngsters encourage them to exercise independence and explore options on their own (Winterbottom 1953) in the context of warm nurturing and guidance, a combination that accelerates the development of the skills necessary for handling the responsibility implied in making one's own choices and trying out new ideas (Rosen & D'Andrade 1959, Hermans et al 1972). These parents were also found to reward the praiseworthy accomplishments of their children, yet ignore disappointing performances. This overall pattern is essentially reversed when it comes to the parents of failure-oriented youngsters (RC Teevan & R Fischer, unpublished data). Here the disappointing performances of children were perceived as violations of adult expectations and punished accordingly, usually severely, whereas success was met with faint praise and even indifference.

More recent research has confirmed these earlier findings (Eskilson et al 1986, Ginsburg & Bronstein 1993, Jacobs et al 1998, Strage 1999). For example, success-oriented college students recall their parents employing praise more often in success, and punishment less often in failure compared with the recollections of failure-avoiding students who report the opposite pattern (K Tomiki 1997).

Several variations in these basic child-rearing patterns have also been documented recently, all of which are associated with uncertain self-estimates of personal worth among children, chronic achievement anxiety, and an increased likelihood of self-handicapping behavior (Kernis et al 1992, Kimble et al 1990). These debilitating patterns include giving children inconsistent, noncontingent feedback, such as when parents sometimes punish what they perceive as their child's successes and at other times disregard or even reward poor performances (Kohlmann et al 1988). Similar parental reactions have been implicated in the development of learned helplessness, a phenomenon in which learners give up trying because they come to believe, often rightly, that they have no control over their own destiny (Mineka & Henderson 1985). Another debilitating parental reaction involves consistently providing false feedback,

e.g. telling children that they have performed poorly when they have done reasonably well or pronouncing the child's performance adequate when it is clearly not. Other disastrous patterns involve aggressive, often overbearing demands for excellence but with little or no guidance for how to achieve it (Chapin & Vito 1988). In this case, children hopelessly outclass themselves by maintaining unrealistically high self-standards with no way to attain them.

Recent investigations have also extended the study of these dynamics to include ethnic factors. For example, Asian students appear more subject than Anglo students to demanding family values that imply the threat of personal rejection should they fail academically (Hess et al 1987; K Tomiki 1997), and as a result they are often driven to succeed more out of a fear of failure than for intrinsic reasons (Eaton & Dembo 1997).

Given the apparent consistency of such child-rearing practices at different points in time as well as their early onset, one gains the impression that the tendencies to approach success and to avoid failure found among adults likely reflect fundamental personality structures laid down at the deepest levels. Yet if the quality of child rearing contributes to later achievement styles in such straight forward, discernable ways, as suggested here, then cannot negative dispositions be changed or at least offset and positive ones reinforced by rewarding positive achievement goals? To address this question we need to consider the kinds of incentive systems used in schools to motivate students to achieve.

CLASSROOM INCENTIVE STRUCTURES

Every classroom reflects rules that determine the basis on which students will be evaluated and how rewards such as grades, praise, or gold stars are distributed (Doyle 1983). This arrangement has been compared to a game, albeit a serious one, in which students attempt to earn as many points (rewards) as possible (Alschuler 1973). A wide array of rewards are available, including positive reinforcers, which range from the internalized satisfaction of having done one's best (which abets learning goals) to public recognition for doing better than others (reinforcing of performance goals) or at least being praised for complying with the rules of the game, which supports such prosocial behaviors as submission to teacher authority and a willingness to try hard. Negative reinforcers also abound for noncompliance with a work ethic, ranging from the threat of poor grades to teacher warnings and the enforced isolation of rule breakers.

In effect, then, not only are the causal linkages between achievement goals and subsequent academic performance mediated by cognitive mechanisms, but achievement goals are themselves controlled in turn by prevailing classroom incentive systems. Two incentive systems have been the subject of intensive research in recent years.

Ability Games

Many classrooms employ rules that turn schooling into what has been described as a failure-oriented (competitive) ability game (Ames 1990, Covington & Teel 1996), i.e. rules that encourage performance goals whose purpose is variously to enhance one's reputation for ability by outperforming others, to avoid failure, or at least to avoid the implications of failure, that one is incompetent. These negative achievement goals are provoked largely by a scarcity of rewards (e.g. good grades) because these top marks are distributed unequally, with the greatest number going to those students who perform the best or learn the quickest. This arrangement amounts to a zero-sum scoring system. When one student (player) wins (or makes points), other students must loose (points). In such a competitive game, the main obstacles to overcome are other students, not the challenge of mastering subject-matter material. Thus, good grades become valued not necessarily because they indicate that one has learned a stipulated amount or learned it well, but because they imply that one is able, whereas poor grades imply a lack of ability that triggers feelings of worthlessness.

Failure-oriented students are placed at the greatest risk in an ability game because they have tied their sense of worth to grades. As a consequence, unlike success-oriented students, there are few if any alternative, personally meaningful incentives available to failure-oriented students other than striving for high grades, which are in scarce supply. Thus, sadly enough, for these students trying one's best provides little satisfaction if performance failure is the anticipated outcome. Indeed, as documented previously (Covington 1998), having studied hard but failing anyway, far from providing any comfort, actually creates the ultimate threat: the implication that one is incompetent. Consequently, failure-oriented students must satisfy themselves with the thin consolation provided by the relief of not failing, or at least of not failing in ways that imply low ability.

The Dynamics of Achievement Failure   Competitive ability games gain a measure of credibility from a popular misinterpretation of drive theory, which assumes that students will comply with prevailing academic demands if teachers can only provide the right rewards or threaten sufficient punishments, and that the fewer the rewards offered, the harder students will attempt to attain them. The evidence does not support these propositions. Several studies have explored the various consequences of falling short of one's grade goals in competitive circumstances and how these dynamics play themselves out over time in actual classrooms, ranging from the elementary level (Schwarzer & Cherkes-Julkowski 1982, Schwarzer et al 1983) to middle school (Hagtvet 1984) and college settings (Covington & Omelich 1981). As a group these studies, one of which tracked German high school students over a 2-year period (Schwarzer et al 1984), typically employed either path analytic interpretations of multiple regression or structural equation modeling, techniques that strengthen a causal interpretation of the events observed.

These studies reveal a common thread. Basically, the degree of shame (an ability-linked emotion) that follows a first classroom failure experience depends largely

on the individual's initial self-concept of ability—the lower the student's self-estimate, the more he or she experiences shame and feelings of hopelessness. Then as one failure follows another over time, these feelings intensify for the individual, driven by several interlocking processes. First, nonability explanations for failure become increasingly implausible, and as a result, self-estimates of ability steadily deteriorate. Second, failures are increasingly attributed to a lack of ability. These dynamics are intensified by competitive pressures. In short, then, as failures mount, failure-prone students believe themselves to be more and more deficient in the very factor— ability—that emerges in their minds as the most important ingredient to competitive success. These dynamics are typically accompanied by increasing levels of anxiety or, for some subsamples of students, the reverse: lower levels of anxiety accompanied by an increasing sense of hopelessness (Schwarzer et al 1984). This latter pattern appears akin to a state of resignation and growing indifference to events.

Other complementary, multivariate studies have also examined these same dynamics but within the foreshortened time frame of a single study/test cycle (Covington & Omelich 1979, 1988). Students whose achievement goals are defensive in nature, i.e. failure avoiding, initially assess their chances of succeeding on an upcoming test as marginal and report being riddled with anxiety (Carver & Scheier 1988). These fears, especially concerns about being unmasked as incompetent (Laux & Glanzmann 1987), cascade forward through time to interfere with both test preparation and eventual performance. As to the quality of test preparation, multivariate findings not only corroborate those previously cited correlational studies that merely demonstrate an association between achievement goals and the quality of study, they also place them in a larger dynamic context. More specifically, students preoccupied with defensive performance/avoidance goals are foreclosed from deep-level processing, largely because of the distracting effects of anxiety triggered by fears of incompetency (Covington & Omelich 1988). As a consequence, what is learned by these students is learned sparingly, if not superficially, and often on a rote basis, so that later recall in the face of continuing test anxiety is marginal at best, thereby completing the causal, trichotomous network associated with achievement goal theory.

Incidently, these findings suggest that poor performance is often less the result of anxiety interfering with the retention of what is learned than of the fact that anxious students typically learn less to begin with (Culler & Holahan 1980, Tobias 1986, Topman & Jansen 1984). By this reasoning, achievement anxiety may best be thought of as a noncausal, emotional byproduct that accompanies the realization that the individual is inadequately prepared and will do poorly.

Returning to the microdynamics of the study/test cycle, feelings of incompetency also drive a host of self-protective actions—which, according to the findings of several multiple-regression studies, disrupt the quality of test preparation even further (Covington & Omelich 1988). For instance, failure-avoiding students indulge in blame projection (e.g. "If I had a better teacher, I might do better") and in wishful thinking (e.g. "I wish that the test would somehow go away"). Not only do these multivariate analyses corroborate the operation of self-handicapping tendencies among failure-avoiding students, they also place such self-sabotage at the very heart

of the achievement process when students risk their sense of worth in a competitive learning game.

The general fear-of-failure dynamics described here have been differentiated for a subgroup of students who closely resemble the performance/approach type of Elliot & Harackiewicz (1996). These individuals, referred to as overstrivers by other investigators (Covington 1998, Depreeuw 1990), do in fact approach success, but for defensive reasons: to avoid failure. Overstrivers experience great emotional tension throughout the achievement cycle, equal to that of performance/avoidance students. But for overstrivers, the direction of the impact of tension on the quality of test preparation is reversed. Instead of impairing their studies, as it does for failure avoiders, the presence of emotional tension actually mobilizes the enormous capacity of overstrivers for study, which typically takes the form of slavish overpreparation. However, although anxiety arouses the considerable resources of overstrivers, the tension that persists during test-taking itself appears to cause a massive failure to recall what was originally learned (Covington & Omelich 1987). There is no evidence of a skill deficit here, and certainly no lack of involvement. Rather, overstrivers appear to suffer from a retrieval deficit in which anxiety acts to inhibit the recall of even well-learned material.

Implications   The importance of multivariate studies that trace the joint impact of cognitive, motivational, and emotional factors on achievement over time cannot be overestimated, for several reasons. First, these studies make clear that school achievement is most properly viewed as a clustering of interrelated causal factors—cognitions (goals), self-protective mechanisms, and feelings whose relationships to one another and ultimately to school performance itself change as students progress from one achievement event to another (Pekrun 1992, Ratner & Stettner 1991). Moreover, these dynamics are highly situated and subject to prevailing work demands and incentive systems.

In short, researchers now possess conceptual blueprints within which they can locate and trace an enormous array of complex, interacting factors that form the essence of achievement behavior. This means that researchers are now able to document with unprecedented precision just how classroom achievement processes unfold and, of equal importance, just how these dynamics change as a function of individual learner differences. And these latter revelations hold enormous practical importance. A case in point is the discovery that the nature of the relationship between anxiety and performance—whether a skill deficit or a retrieval deficit—appears to depend on the prevailing achievement goals of the individual learner. Clearly, then, from the standpoint of helping anxious students, no single intervention is likely to be equally effective for all. Different types of students suffer different deficits and require different kinds of treatment, a fact neatly demonstrated by the research of Naveh-Benjamin (1985). This researcher administered relaxation therapy to a group of highly anxious students with good study strategies, akin to overstrivers. Another group of anxious students who possessed poor study habits were instructed in how to improve their study skills. These same treatments were administered to two other

identical groups, but in the reverse order to provide a control comparison. The benefits of therapy were minimal for these latter two groups because the interventions did not compensate them for their particular weaknesses, whereas when a proper match between deficit and remediation was achieved, school test performance improved for both kinds of anxious students.

Second, these multivariate analyses also provide important insights into the structural causes of the record of poor school achievement among many minority youngsters from the urban ghettos and barrios of America. These youngsters are put at a considerable disadvantage by the ability-game mentality, for two reasons. For one thing, for many of these minority youngsters the primary achievement goals to which they aspire—caring for others, maintaining kinship roles for the sake of survival, and assuming adult work roles—lie outside the more traditional mainstream realm of academic achievement, and as a result, they are not particularly honored or encouraged. For another thing, given the middle-class emphasis on competitive values, on independence, and on the scramble for improved social status, minority students are also deprived of their preferred means of achieving their goals, which is largely through cooperation, sharing, and close social cohesion (Losey 1995). Numerous case studies make clear that minority students are capable of extraordinary achievements despite these institutional obstacles, but only if the benefits of schooling are perceived by them to fit their unique needs (Reyes & Jason 1993). For example, Suarez-Orozco (1989) documented the various reasons that many Hispanic refugees from war-torn Central America won top honors in American schools and often went on to professional careers. Their goals were neither self-indulgence nor personal financial gain. These youngsters were driven to rescue family members who had been left behind in their war-devastated homelands, and who had sacrificed much so that these youngsters could immigrate to America.

This conflict of cultural values (goals) is intensified for minority youngsters in the transition from the elementary years to middle school, when evaluation becomes more formal and competitive as the function of schools focuses more and more on the selection and sorting out of talent (for a review, see Wigfield et al 1987). As a consequence, minority youngsters must increasingly play by competitive rules if they are to play at all, rules that for them are often frightening and confusing.

Third, the multivariate study of school dynamics via achievement goal theory also serves notice that teachers are at risk as much as are students. The broad outlines of a demoralizing downward cycle of student achievement and deteriorating teacher/ student relationships have emerged in recent years (Wentzel 1996). When excessive emphasis is placed on performance goals and success is narrowly defined as outperforming others, teachers pressure students. They use controlling autocratic teaching techniques, which means relying on extrinsic rewards, allowing students little choice for how they go about learning, and threatening to withdraw emotional support as a means of control (Maehr & Stallings 1972). It is ironic that these are the very instructional practices, noted earlier, that lead students to reject positive social goals, including sharing and cooperation, and in the process to become passive-resistant, if

not outright defiant, of teacher authority. These disruptive behaviors are frequently cited by teachers as one of the main reasons for leaving the profession.

Fourth, and perhaps most important, achievement goal theory and the multivariate evidence inspired by it provide a sound scientific basis for reshaping American educational practices.

Equity Games

Motives-as-goal adherents have championed radically different perspectives on classroom incentive structures, which in addition to enjoying considerable empirical support make common cause with the pedagogical views of many influential educational philosophers, beginning with Dewey (1916). Goal theorists believe that the basic impediment to classroom learning is the scarcity of rewards, which forces most youngsters to struggle to avoid failure rather than to approach success. The solution, they suggest, involves substituting new rules of engagement that recognize students' efforts for self-improvement, for task diligence, and for making progress as well as for correcting their own learning errors—yardsticks of accomplishment that are open to all, irrespective of ability, status, or past experience. Obviously, not everyone is equally bright, nor can all children compete on an equal footing intellectually. But at least, these goal theory proponents argue, schools can provide all students with a common heritage in the reasons they learn. In effect, goal theorists seek to establish a condition of motivational equity (Covington 1998, Nicholls 1989).

Central to creating motivational equity is the need for teachers to set the absolute standards of excellence they require of all their students and to make explicit the relationship between goal attainment and payoffs. One equity approach that has been studied extensively in recent years involves a mastery paradigm in which students must demonstrate a minimum level of skill or task proficiency before receiving a payoff, which may simply be the chance to proceed to the next level of challenge (for a review, see Covington 1992). For those students who do not achieve the minimums initially, there are options for remediation through the help of teachers, fellow students, or both (Slavin 1983, Slavin et al 1984). Elements of task choice, individual goal setting, and autonomy of student action have also been introduced into the basic paradigm. In perhaps the most sophisticated case, students are permitted to work for any grade they choose by amassing credits, e.g. so many points for an A, a B, etc, with the caveat that the higher the grade to which students aspire, the better they must perform or the more they must accomplish (Covington 1998, Covington & Omelich 1984).

Researchers have investigated the advantages of equity paradigms across grade levels. In general, the findings favor the motivational and learning benefits of such paradigms compared with those of incentive structures that embody competitive ability games. Several complementary, interlocking research strands can be identified.

First, a number of studies have assessed the motivational impact of individual components of the equity paradigm, taken singly and in isolation from each other but under rigorous laboratory conditions. Consider, for example, the alleged benefits

of individual goal setting as studied by Ames and her colleagues (see Ames & Ames 1984). Elementary school children who were directed to establish their own learning goals perceived failure experiences as temporary, compared with otherwise comparable subjects who adopted a competitive goal. This latter group was more likely to interpret failure as a matter of personal incompetency. Moreover, when students succeeded under competitive goal conditions, they were more likely to perceive themselves as smarter than their companions (adversaries), and to engage in more self-praise at the expense of their failing competitors, whom they saw as less deserving. As for the losing competitors, failure created self-loathing, especially among those students who were high in self-perceived ability. This suggests that under competitive goals, individuals are likely to continue striving only for as long as they remain successful. No one wants to continue if the result is shame and self-recrimination.

In complementary research, experimentally induced learning goals as contrasted to ability-focused performance goals were found to generate less task anxiety and an increased willingness to risk failure in the pursuit of challenging tasks (Meece 1991), greater metacognitive self-regulation and thoughtfulness in approaching problems (Schunk 1996), a greater sense of personal control over events (Covington & Omelich 1984), and greater interest in the subject matter being covered (Bergin 1995).

Second, the findings of these fixed-design studies have generally been replicated under actual classroom conditions in a number of correlational-based investigations. For instance, Garcia & Pintrich (1994) demonstrated that the degree to which college students exhibited learning as opposed to performance goals in a given class was closely associated with the extent to which they judged the class to be encouraging of individual goal setting and allowing for student choice of assignments. Similar relationships have also been found among middle-school youngsters (Pintrich et al 1994). Likewise, in a study of some 20 elementary classrooms, Ames & Archer (1987) reported that variations in the effective use of learning strategies, the perceived value of effort, and positive feelings toward learning were all related to the extent to which children perceived their job to be the mastering of subject-matter material, not competing with others. Other similar studies using a variety of methodologies, including qualitative analysis of classroom observations, have uncovered similar positive patterns (Meece 1991; Meece et al 1988, 1989).

Third, a series of applied field studies have successfully incorporated elements of the equity paradigm in various combinations as a regular part of the curriculum among such diverse groups as college undergraduates (Covington & Omelich 1984) and at-risk minority students in middle school (Covington & Teel 1996, Teel et al 1994). In the latter instance, researchers controlled the quality and quantity of student work by applying a simple rule: The better the grade students wanted, the more credit they had to earn, irrespective of how well others were doing. Substantial amounts of grade credit were given based on how much students improved and for redoing assignments after having received corrective feedback. Also, grading criteria honored a variety of ways to demonstrate what was learned, including the use of drawings, poetry, and skits. These procedures appeared particularly effective for at-risk young-

sters who, because of a long history of academic failure, had come to despair of their academic promise. In an additional example, Ames (1990) and Ames & Maehr (1989) modified the rules of the learning game in 100 elementary school classrooms favoring noncompetitive successes and the sharing of authority among teacher and students. Results indicate that this restructuring changed the learning climate for the better.

In order to institutionalize the kinds of restructuring cited here, the climate of an entire school must change. This involves negotiating a shared instructional vision among teachers, staff, and administration (Maehr & Midgley 1991). The pioneering efforts of Weinstein and her colleagues to carry out such school-wide change alerts us to the problems and promise of pursuing sustainable educational reform (Weinstein 1998, Butterworth & Weinstein 1996, Weinstein et al 1995) .

CONCLUSIONS: FUTURE DIRECTIONS FOR RESEARCH

Several directions for future research have been implied in the course of this review, perhaps the most important being the need to understand more fully the nature and costs of the continuing mismatch of cultural values that confronts many minority students, both with respect to the goals of schooling and the means by which these goals are achieved. In this regard, the pathway to responsible educational change would seem to lie in widening the legitimate reasons for learning as well as the permissible means for achieving excellence, including cooperation and sharing. The work of Suarez-Orozco (1989) cited earlier regarding Central American immigrants emphasizes the fact that the values of the dominant white middle class (autonomy, independence, and competition) are not the only pathways to personal excellence. Rather, an almost endless variety of as-yet largely unexplored avenues from other cultures can be equally effective and motivating (Valdéz 1998). These alternative reasons for learning (goals) and the means to encourage them deserve our immediate attention (see Maehr 1998).

A second proposal echoes the first. Although we are relatively well informed about the role of academic goals in motivating achievement, our understanding of how social goals enter into the process lags behind. It is interesting to note that it was drive-theory proponents who first offered a theoretical model—the dynamics of action model (Atkinson 1981, McClelland 1980)—that captured the common-sense proposition that many motives, not just one, operate in any achievement setting, and that the individual's behavior may be best understood in terms of the moment-to-moment changes in the relative strength of these motives. The perspective afforded by this action model is useful because it portrays achievement behavior in its full richness and complexity. Moreover, it stands as a challenge to the current limits of our theory building and taxes our ingenuity to develop ways to measure instability as well as stability in achievement behavior. We would do well to revisit these earlier offerings.

A third proposal concerns the fact that our understanding of achievement dynamics as amassed over the past half century is limited largely to students striving in the context of clear goals against explicit standards, usually relative in nature, that define success and failure (Brophy 1999). By comparison, we are far less knowledgeable about achievement dynamics as they relate to exploratory learning, to the appreciation and valuing of what one is learning, and to the role motivation plays in the pursuit of one's unique, individual interests. In this exploratory world, learners cannot say with any certainty what will become of what they learn, or even how much of their studies they have completed, but only that they have undertaken a task that can never be finished. It is in this sense that one's learning goals can be intangible—but motivating nonetheless—and what counts as success and failure comes to be defined idiosyncratically, not by consensus or by comparison with the accomplishments of others.

It is time that we redress this imbalance and give more attention to the valuing aspects of motivation. This is especially imperative because many observers have lamented the prospects of ever encouraging such intrinsic values as subject-matter appreciation in a context in which many students are grade driven and a common motivational strategy involves the threat of poor grades. Fortunately, there is a limited but growing body of evidence that suggests that striving for good grades and caring for learning are not necessarily incompatible goals, and that in some situations they may actually be mutually reinforcing (Covington 1999).

Finally, a note about educational reform. The accumulated research inspired by achievement goal theory and its motivational correlates has indicted the practice of limiting rewards as a short-sighted, destructive strategy for motivating students. But to indict only the most blatant mechanisms of competition, such as grading on the curve, is to miss the larger point. Competition is more than a dubious way to arouse children to learn. Competitive practices are only the obvious manifestations of more subtle but powerfully entrenched obstacles to educational change. The larger culprit is an ethos, or world view, held by many policy makers and ordinary citizens alike regarding the essential nature of the process of schooling. This world view is best expressed metaphorically when schools are likened to factories (see Marshall 1990): First comes children cast in the role of workers whose job it is to learn, followed by teachers in the role of supervisors whose task it is to guarantee quality control, capped off by school boards (akin to management) who wield ultimate authority over the entire process. Metaphors such as this establish the customs, espouse ideals, and above all determine the rules by which people relate to each other—in this case, rules that can set person against person and discourage cooperation. Many beliefs and practices detrimental to positive educational change form the vanguard of this metaphor, not the least of which are the hardened institutional lines of authority that run top down from school boards to teachers, a practice that disenfranchises teachers and undercuts their ongoing struggle for professional status (Maehr & Midgley 1991). Another fallout of the factory model is the misplaced yet surprisingly pervasive view of children as passive recipients of knowledge—vessels to be filled, or blank slates

to be etched—not at all reflective of the active, willful, ingenious human beings that psychological research has shown children to be.

Before true educational reform can occur, this outdated factory metaphor of schooling must be replaced with new metaphors that more fully respond to the demands and opportunities of the twenty-first century. We need not look far for tantalizing possibilities, including an odds-on favorite: schooling as future-building, and personal goals as mediators of the future. In this connection, one is reminded of Harry Lauder's remark that "the future is not a gift, it is an achievement." If the future is an achievement, as Lauder argued, then teachers are futurists, along with politicians, filmmakers, and journalists: those individuals who make people's futures more real to them.

Psychologists can aid in creating new, more constructive public visions regarding the role and mission of schools in a variety of ways, not the least of which would involve redoubling research into children's perceptions of the future and their place in it. They can also continue developing promising lines of thought involving the concept of motivation, not as a matter of drives—with the underlying assumption that children must be forced to learn—but as a matter of goals, personal visions that beguile and draw, indeed entice, youngsters toward a future of their own creation.

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