Journal of Applied Psychology
2001, Vol. 86, No. 4, 629–640

0021-9010/01/$5.00 DOI: 10.1037//0021-9010.86.4.629

The Role of Goal Orientation Following Performance Feedback

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This study examined the relationship of goal orientation and performance over a series of 2 challenging performance events. After providing performance feedback on the 1st event, the authors found that the relationship between a learning goal orientation and performance remained positive for the 2nd event, the relationship between a proving goal orientation and performance diminished from a positive to a nonsignificant level, and the relationship between an avoiding goal orientation and performance remained negative. Data analysis also indicated that the relationships between the 3 goal orientation dimensions and the performance event were differentially mediated by goal setting, self-efficacy, and effort.

The construct of goal orientation emerged from a research program conducted by Carol Dweck (1986; Dweck & Leggett, 1988; Elliott & Dweck, 1988). Dweck conceptualized the broader goals pursued by individuals as a personality dimension and proposed that individuals have goal orientation preferences in achievement situations. Dweck identified two major classes of goal orientations: (a) a learning goal orientation, which is to develop competence through expanding one's abilities by mastering challenging situations, and (b) a performance goal orientation, which is to demonstrate and validate one's competence by seeking favorable judgments and avoiding negative judgments.

Learning and performance goal orientations are associated with different personal beliefs about ability and effort. A learning goal orientation is associated with an incremental theory, which is the belief that ability can be developed and that effort is an efficacious strategy for developing the wherewithal needed for successful task performance. In contrast, a performance goal orientation is associated with an entity theory, which is the belief that ability is difficult to develop and that successful task performance is primarily based on possessing the requisite innate ability. Because ability is perceived as difficult to develop, effort is not viewed as a means for enhancing task performance. Rather, the need to exert effort is interpreted as evidence of low ability because an individual would not need to struggle so hard to succeed if he or she had high ability.

Recently, a number of empirical studies have investigated the relationship of goal orientation and task performance. The conclusions from these studies about the relationships of learning and performance goal orientations with task performance are, however, far from unequivocal. In particular, researchers have reported that a performance goal orientation has negative (Ford, Smith, Weissbein, Gully, & Salas, 1998), nonsignificant (VandeWalle, Brown, Cron, & Slocum, 1999), and positive relationships (Hoover, Steele-Johnson, Beauregard, & Schmidt, 1999) with task performance.

Given the importance of task performance as a focal outcome variable in industrial–organizational (IO) psychology research, additional research is clearly warranted to help further understand the array of relationships found between goal orientation and task performance. In the present article, we focus on this need by using the following approach. First, we discuss how the psychometric properties of the goal orientation instruments used in prior research may partially explain the contradictory research findings. The conclusions from that discussion were incorporated into our research design. Second, we hypothesize how the nature of the relationship between goal orientation and task performance would evolve with task experience and performance feedback. Third, in the context of task experience and performance feedback, we hypothesize how goal setting, effort, and self-efficacy would differentially mediate the relationships of each goal orientation dimension with subsequent task performance. These hypotheses were tested with data collected in a longitudinal field study.

Goal Orientation

The construct of goal orientation originated in the educational psychology and child development literatures, and most of the initial goal orientation research was conducted with adolescents in experimental studies. In the early 1990s, however, goal orientation gained the attention of IO psychologists (for early theory development in the IO psychology field, see Farr, Hofmann, & Ringenbach, 1993; Kanfer, 1990; and VandeWalle, 1993). As subsequent empirical research commenced in the IO psychology field, several methodological and conceptual issues also emerged.

Construct Dimensions

In the initial research conducted to develop valid psychometric assessment instruments, researchers conceptualized goal orientation as a two-factor construct (learning and performance). The

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A preliminary version of this article was presented at the 15th Annual Meeting of the Society for Industrial and Organizational Psychology, April 2000, New Orleans, Louisiana.

We wish to acknowledge constructive comments made by Anita Bhappu, Joan Brett, Steve Brown, Ellen Jackofsky, Ed Locke, and Alex Stajkovic on earlier versions of this article.

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items used to operationalize the performance factor were primarily focused on concerns with demonstrating one's ability to others (e.g., Button, Mathieu, & Zajac, 1996). Studies using goal orientation instruments that were based on this two-factor model often found that a performance goal orientation had nonsignificant or modestly negative relationships with task performance outcomes (e.g., Fisher & Ford, 1998). Several scholars, however, have advocated that goal orientation is better conceptualized as a three-factor construct. VandeWalle (1997) noted that a performance goal orientation, as defined by Heyman and Dweck (1992), encompasses both the desire to gain favorable judgments about one's ability, and the desire to avoid unfavorable judgments about one's ability. Guided by this conceptualization, he developed and collected validation evidence for scales that assessed a learning goal orientation and both the proving and the avoiding dimensions of a performance goal orientation. These three dimensions are defined as follows (VandeWalle, 1997):

1. A learning goal orientation is a focus on developing one's competence by acquiring new skills, mastering new situations, and learning from experience.
2. A proving goal orientation is a focus on demonstrating one's competence and the gaining of favorable judgments from others.
3. An avoiding goal orientation is a focus on avoiding negation of one's competence and the avoiding of negative judgments from others. (p. 1000)

Elliot and Harackiewicz (1996) developed a similar three-factor model of goal orientation and proposed that the distinction between the proving and avoiding goal orientation dimensions is especially pertinent for self-regulation. In their theoretical model, a proving goal orientation is grounded in self-regulation that is based on attainment of positive outcomes (e.g., superior performance compared with others). In contrast, an avoiding goal orientation is grounded in self-regulation that is based on avoiding potential negative outcomes. Elliot and Sheldon (1997) proposed that as compared with a focus on attaining positive outcomes, a self-regulation focus on avoiding negative outcomes is more likely to produce cognitive sensitivity to negative stimuli, anxiety about negative possibilities, and diffusion of cognitive resources to explore and avoid the multitude of potentially negative outcome paths.

A meta-analysis conducted by Elliot (1994) provided empirical evidence that distinguishing between the proving and avoiding dimensions enhances the predictive power of a performance goal orientation. Elliot reviewed published studies on how intrinsic motivation was influenced when experimental manipulations were used to induce a performance goal orientation.[1] He found that classifying the manipulations into either proving or avoiding categories improved the fit of the data to the hypothesized models from less than 50% of the studies to more than 90% of the studies. Given Elliot's findings and those of other studies (e.g., VandeWalle & Cummings, 1997) that showed that proving and avoiding dimensions have differential relationships with various outcome variables, we used the three-factor model of goal orientation for our theory development and hypothesis testing.

Domain Specificity

Domain specificity level is a second methodological issue that is pertinent for goal orientation research. The Button et al. (1996) instrument assesses the global level of learning and performance goal orientations. Items such as "I try to improve on my past performance" lack reference to any specific context, such as to academics or work. Koestner and McClelland (1990), however, proposed that achievement motivation may differ by particular areas (or domains) in an individual's life. Similarly, Dweck (1999) proposed that individuals may have domain-specific personality patterns. It is possible that an individual could hold a strong learning goal orientation in the academic domain but not in another major life domain, such as in work. As a case in point, Phillips and Gully (1997) used a global measure of goal orientation (i.e., Button et al., 1996) and found very modest or statistically nonsignificant relationships for both learning and performance goal orientations with self-efficacy, goal setting, and exam performance. The magnitude of such relationships may be stronger when goal orientation is assessed with a domain-specific instrument such as the one used in this study.

Relationship Pattern of Goal Orientation and Performance Outcomes

Prior goal orientation field studies have primarily assessed outcome variables, such as exam performance or sales volume, at a single time point (e.g., Sujan, Weitz, & Kumar, 1994). However, goal orientation theory discusses how learning and performance goal orientations lead to differential response patterns (e.g., behaviors, cognitions, and subsequent task performance) after individuals have experienced feedback from a challenging task (Dweck & Leggett, 1988). Recognizing this theoretical issue, researchers (e.g., Colquitt & Simmering, 1998; Phillips & Gully, 1997) have recommended that researchers should study the influence of goal orientation over multiple performance episodes. The findings from a limited number of empirical studies provide some insight for the expected pattern of relationships for goal orientation and task performance when individuals have multiple task encounters.

Elliot and McGregor (1999) studied the influence of goal orientation on short-term versus long-term material recall. They assessed learning, proving, and avoiding goal orientations and collected data from a midterm exam and an end-of-the-semester pop quiz. A learning goal orientation had a positive relationship with performance on the midterm exam and the pop quiz, whereas an avoiding goal orientation had negative relationships with both outcomes. Especially interesting was the finding that a proving goal orientation had a positive, significant relationship with performance on the midterm exam, but the relationship deteriorated to a nonsignificant level on the pop quiz. Although Elliot and McGregor focused on the mediation role of test anxiety, they recommended that self-regulation mediators be examined in future research. The current study examined three mediators: effort, self-efficacy, and goal setting.

[1] We note that the current research focuses on testing of the influence of goal orientation when it is assessed as a personality dimension. However, researchers have also found that goal orientation can be influenced as a state by situational cues about effort, competition, evaluation standards, and an individual's worth being contingent on achievement (see Ames, 1992, and Nicholls, 1984, for detailed discussions). In experimental studies, researchers have used treatment instructions to induce state levels of learning and performance goal orientations in participants.

The deterioration in the benefit of a proving goal orientation[2] was also found in a laboratory study by Ford et al. (1998). They assessed the influence of goal orientation during a training program for a complex decision-making task. They found that a proving goal orientation had a nonsignificant relationship with task performance at the end of the training program and that it had a negative relationship with subsequent performance on a complex transfer task. In contrast, Ford et al. found support for a positive, mediated relationship for a learning goal orientation with performance on the complex transfer task.

A field study by VandeWalle et al. (1999) indicated that learning and proving goal orientations also have differential relationships with task performance when performance is ongoing and when continuous feedback is available. They examined the sales performance of salespeople participating in a 90-day product-promotion campaign. Feedback in this study was continuous because the participants had real-time knowledge of their sales volume and that of their colleagues during the promotional campaign. At the end of the sales campaign, VandeWalle et al. found that a learning goal orientation had a positive relationship with sales performance, whereas a proving goal orientation was unrelated to sales performance.

Why do we find these relationship patterns for goal orientation and task performance when individuals face multiple task episodes? There are several theories on the role of performance feedback that provide insight, especially when performance feedback is not entirely positive.

First, goal orientation influences interpretation of the purpose of feedback (Bobko & Colella, 1994; Farr, 1993; Kanfer, 1990). A learning goal orientation leads to interpreting feedback as useful, diagnostic information about how to correct errors and how to develop competencies needed for task mastery. In contrast, a performance goal orientation leads to interpreting feedback as evaluative and judgmental information about the self. Given these different interpretations of the purpose of feedback, a learning goal orientation would seem to be more likely than a proving or avoiding goal orientation to be linked with attempting to extract and use salient information from feedback to enhance performance.

Second, Farr et al. (1993) proposed that goal orientation influences the saliency of different performance aspects. Specifically, they suggested that a high learning goal orientation, as compared with a high performance goal orientation, should lead to focus on the successful aspects of past performance. In addition, Elliot and Harackiewicz (1996) proposed that a high avoiding goal orientation results in cognitive-processing patterns that evoke sensitivity to failure-relevant information. Given that high proving and high avoiding goal orientations are associated with a belief that ability is difficult to develop, the perception of negative feedback about current performance does not provide much of a morale boost about the prospects for future task performance.

Third, Kluger and DeNisi's (1996) theory on locus of attention after feedback interventions provides additional insight on the role of feedback. They proposed that when highly task-focused individuals receive feedback, they are more likely to maintain cognitive resources allocated at the task level. In contrast, when highly ego-involved individuals receive performance feedback, allocation of cognitive resources is shifted away from the focal task and toward self-attention. Task focus, a constituent characteristic of a learning goal orientation (Nicholls, 1984), enhances the maintenance of an individual's cognitive resources that are allocated to a task, and this allocation focus is productive for enhancing future task success after the receipt of feedback. In contrast, ego-involvement, a constituent component of a performance goal orientation, leads to a preoccupation with self-attention and decreases an individual's cognitive resources allocated to a task, and this cognitive resource diffusion also decreases the potential for future task success after the receipt of feedback.

Taken as whole, prior empirical findings and the implications of the theories that we have outlined here have led us to propose the following relationship patterns for goal orientation and multiple episodes of task performance.

> *Hypothesis 1:* At Time 1, goal orientation will be related to performance such that (a) a learning goal orientation is positively related to performance, (b) a proving goal orientation is positively related to performance, and (c) an avoiding goal orientation is negatively related to performance.
>
> *Hypothesis 2:* At Time 2, after feedback on Time 1 performance, goal orientation will be related to performance such that (a) a learning goal orientation will maintain a positive relationship with performance, (b) the relationship of a proving goal orientation with performance will deteriorate to a nonsignificant level, and (c) an avoiding goal orientation will maintain a negative relationship with performance.

It may appear counterintuitive that if proving and avoiding goal orientations are based on concerns about competency demonstration, why wouldn't these orientations have positive relationships with the second performance outcome? This paradox can be explained by the following—concerns about an individual's competency appearance do not necessarily correspond with engaging in the effectual actions needed to actually develop competence. Studies in numerous research settings have found that proving and avoiding goal orientations have been associated with the hesitation to seek help to improve performance (Butler, 1993; VandeWalle & Cummings, 1997), with superficial learning strategies (Ford et al., 1998), with cheating (Anderman, Griesinger, & Westerfield, 1998), and with effort limitation (Stevens & Gist, 1997). In essence, the concern with competency is more about superficial demonstration than it is about substantive development, and this superficial focus can sabotage the likelihood that an individual will actually develop the competency that he or she wishes to demonstrate.

In developing our hypotheses on the relationships of goal orientation and task performance, it is important to specify two task characteristics as boundary conditions. First, prior research has indicated that a learning goal orientation should be more beneficial than a proving goal orientation when the task is complex. In a laboratory experiment with undergraduate students, Hoover et al. (1999) found that a learning goal orientation was more beneficial for performance on a complex decision-making task, but a proving goal orientation was more beneficial for performance on a simpler version of the same task. In the current study, a written academic examination in an undergraduate course was used as the complex task. Second, a central tenet of goal orientation theory is that goal

[2] For empirical studies that have operationalized a performance goal orientation with items that primarily reflect the proving dimension, we refer to the construct as a *proving goal orientation.* For theoretical articles that use the term *performance goal orientation,* we retain the original terminology as the authors usually do not make the prove–avoid distinction.

orientation influences the affective, behavioral, and cognitive reactions of individuals in achievement settings (Dweck & Leggett, 1988). In the current study, we assessed the level of task challenge to operationalize the concept of achievement setting.

Goal Orientation and Self-Regulation

Having proposed the relationship pattern of goal orientation with task performance, we next discuss the mediator processes of goal setting, self-efficacy, and effort. These constructs have emerged as three core constructs in the motivation literature for predicting performance outcomes of individuals. A goal is something an individual accepts and tries to attain, achieve, or accomplish (Locke & Latham, 1990). Studies across numerous settings, using both laboratory and field study methodologies, have demonstrated that the more challenging and specific a goal is, the higher the level of individual performance will be. Self-efficacy refers to the belief that a person has the capacity to organize and execute the course of action required to produce a desired outcome (Bandura, 1997). The robustness of the positive relationship between self-efficacy and performance was recently demonstrated by Stajkovic and Luthans (1998), who found in their meta-analysis of 114 studies that self-efficacy contributed a 28% gain in work-related performance. Finally, cognitive theories of motivation, such as expectancy theory (Vroom, 1964), position effort as a principal antecedent of task performance.

Having identified these three core self-regulation variables as important predictors of task performance, we next discuss the relationship for each of these self-regulation variables with goal orientation in the context of feedback on prior task experience.

Self-Efficacy

Phillips and Gully (1997) found that learning and proving goal orientations had path coefficients of .13 ($p < .05$) and $-.14$ ($p < .05$), respectively, with self-efficacy for performing well on an exam. In discussing the findings, Phillips and Gully suggested that their research design of investigating a single performance episode may have attenuated the observed relationships, and they recommended that future research investigate performance outcomes over time. Their recommendation is especially pertinent for the study of the relationship of goal orientation and self-efficacy for two reasons. First, initial experience with a task influences an individual's self-efficacy for future task performance (Bandura, 1997). Second, the theoretical evidence presented in the previous section suggests that goal orientation influences the processing of task experience and feedback and thus the level of self-efficacy.

Button et al. (1996) and Phillips and Gully (1997) found that a learning goal orientation had a positive relationship with an internal locus of control—the belief that a person's actions are a primary determinant of events and outcomes in his or her life. Given this sense of self-determination, positive feedback on prior task success is likely to be interpreted as an indicator that one has the wherewithal for success on similar task engagements in the future. Of course, individuals do not always experience only positive feedback with their initial task experience. A strong learning goal orientation, however, should help foster resilience to negative feedback. This resilience stems from the tendency for a learning goal orientation to foster framing errors as opportunities to learn (Dweck & Leggett, 1988), the belief that ability can be developed (Button et al., 1996), and the belief that effort is a primary cause of success (Ames & Archer, 1988). This mental framing should be conducive to an individual believing that he or she can eventually develop the competency needed for future task success.

Several studies that have measured a performance goal orientation, with instrument items that primarily reflect the proving dimension, suggest that task experience may be less beneficial for self-efficacy. These studies have found that a proving goal orientation has a relatively weak or nonsignificant relationship with an internal locus of control (e.g., Button et al., 1996; Phillips & Gully, 1997) and a nonsignificant relationship with optimism (VandeWalle, 1996). This lower sense of self-determination and optimism may foster doubts about whether past success will necessarily lead to future success. A high proving goal orientation is likely to be even less beneficial when an individual receives negative feedback about task performance. A proving goal orientation is associated with the entity theory that ability is difficult to develop (Button et al., 1996) and that task challenge level is a primary cause of failure (Ames & Archer, 1988). If ability is difficult to develop and the task challenge level is expected to continue, then negative feedback should be considered an indicator of future task difficulty.

Prior research has not explicitly tested the relationship of an avoiding goal orientation with self-efficacy. However, research findings indicate that compared with a proving goal orientation, an avoiding goal orientation has even stronger relationships with the entity theory of ability and pessimism (VandeWalle, 1996). In addition, a high avoiding goal orientation is emotionally draining. Elliot and McGregor (1999) found that an avoiding goal orientation had strong relationships with trait test anxiety ($r = .56$, $p < .001$) and with the level of state test anxiety recorded in a survey for a just-completed exam ($r = .50$, $p < .001$). On the basis of self-efficacy research (Bandura, 1997), such a level of negative emotional arousal should further undermine self-efficacy.

Effort

In a classic article on responses to performance feedback, Taylor, Fisher, and Ilgen (1984) suggested that the personality factors that influence beliefs about effort should also influence reactions to feedback. Research subsequent to Taylor et al. points to goal orientation as one such personality factor.

Several instrument-validation studies have examined the relationship patterns of learning and proving goal orientations with effort-related constructs. VandeWalle (1997) found that a learning goal orientation had a strong relationship ($r = .50$, $p < .001$) with the desire to work hard, whereas a proving goal orientation had a nonsignificant relationship with the desire to work hard. Ames and Archer (1988) found that a learning goal orientation had a stronger relationship ($r = .37$, $p < .001$) than did a proving goal orientation ($r = .14$, $p < .05$) with the belief that effort is a primary cause of success. Button et al. (1996) found that a proving goal orientation, but not a learning goal orientation, was related to the occurrence of off-task thoughts. The findings of these validation studies suggest that compared with a proving goal orientation, a learning goal orientation is more likely to be associated with high levels of effort exertion because of the ability to stay task focused, the enjoyment of engaging in task effort, and the belief that effort leads to success.

To date, researchers have not tested how goal orientation, as a personality dimension, influences subsequent effort after an initial task experience and performance feedback. However, two studies on state goal orientation are suggestive of the relationship pattern. Stevens and Gist (1997) conducted a laboratory experiment with participants in a negotiation training program. The study consisted of four phases: (a) a negotiation training program, (b) an initial (Time 1) negotiation session, (c) posttraining treatment instructions to induce learning or proving goal orientations, and (d) a Time 2 negotiation session scheduled for 7 weeks after the goal orientation treatments. For the Time 2 negotiation session, Stevens and Gist found that the participants in the learning condition (compared with those in the proving condition) engaged in more interim-period skill-maintenance activities and planned to use more effort in the second negotiation.

A laboratory study by Elliot and Harackiewicz (1996) used treatment instructions to induce learning, proving, and avoiding goal orientations and then had the participants work on solving word puzzles. Having completed the puzzle activity, all participants received the same feedback—that they had exhibited puzzle-solving skills that were commensurate to other university students. The researchers found that compared with the participants in the other two conditions, the participants in the avoiding condition spent less time playing with additional puzzles provided during a free-time period.

These two laboratory studies found that goal orientation influenced effort expenditures in a condition in which feedback on task performance was relatively benign. Elliot and Harackiewicz (1996) suggested that if the individuals had received negative performance feedback, then the influence of goal orientation might have been even more pronounced. Their suggestion is consistent with findings from laboratory research with children by Dweck and Leggett (1988). When facing a setback (such as negative feedback), a learning-goal-orientation treatment condition led to pursuing an adaptive response pattern of persistence with the task and escalated effort. In contrast, a proving-goal-orientation treatment condition led to pursuing a maladaptive response pattern of effort withdrawal with the task when faced with a setback. Given the maladaptive response pattern that Dweck and Leggett found for a proving-goal-orientation state, the pessimism, anxiety, and low interest in hard work associated with an avoiding goal orientation (VandeWalle, 1996) would suggest that effort disengagement should be especially pronounced when negative feedback is encountered.

Goal Level

Our hypothesized relationships for goal orientation and goal setting are grounded in a theoretical model of three work-role-adaptation strategies developed by Higgs and Wood (1999). Similar to goal orientation theory, their model also uses implicit theories of ability and situational framing as core processes to explain the response patterns that individuals tend to pursue in challenging situations.

First, Higgs and Wood (1999) proposed a task involvement (TI) strategy, which is a tendency toward positive engagement to meet the work role transition demands. Building on implicit theory research, they proposed that pursuit of a TI strategy is a function of an incremental theory of ability (Dweck, 1999). In essence, if ability can be developed, then it is pragmatic to pursue developing the competencies required for the new work role. The TI strategy corresponds with a learning goal orientation in that it is characterized as task focused, framing the new role as a challenge rather than as a threat. It focuses on the diagnostic value of feedback. Higgs and Wood proposed that when individuals pursuing a TI strategy experience success and receive positive feedback, their enjoyment of the challenge is likely to lead them to consider even more challenging goals. In the face of obstacles or setbacks, such as the receipt of negative feedback, individuals pursuing a TI strategy are likely to proactively engage in new initiatives and strategies so that they can continue their goal striving. The proposal of a positive relationship between pursuit of a TI strategy and a goal level is consistent with the positive relationship found between a learning goal orientation and a goal level for sales people in the field study of VandeWalle et al. (1999).

The second strategy of self-presentation (SP) corresponds with a proving goal orientation. There is a focus on managing impressions about how successfully an individual is adjusting to the new work-role demands. Pursuit of the SP strategy is a function of an entity theory of ability. If ability is difficult to develop, then effort is diverted from competency development to impression-management activities. Higgs and Wood (1999) proposed that the receipt of positive feedback is likely to lead to goal-level complacency. Setting a more challenging goal would increase the risk of negative feedback in the future. This suggests a relatively neutral relationship between an SP strategy and goal level. This is consistent with the finding of the VandeWalle et al. (1999) study, which found a nonsignificant relationship between a proving goal orientation and the goal level.

The third strategy of defensive reaction (DR) reflects evaluation apprehension and a desire to conceal work-role-adaptation failure. The DR strategy corresponds with an avoiding goal orientation strategy as empirical research indicates that an avoiding goal orientation has strong relationships with fear of negative evaluation (VandeWalle, 1996) and test anxiety (Middleton & Midgley, 1997). Pursuit of the DR strategy is a function of the entity theory of ability and of self-regulation that is based on preoccupation with potentially negative outcomes. Higgs and Wood (1999) proposed that the framing of a work-role change as a threat undermines commitment to succeeding in a new role and diminishes interest in challenging goals. Thus, we proposed that an avoiding goal orientation will have a negative relationship with goal level, especially in the context of feedback that exposes academic deficiencies.

In summary, the three work-role-adaptation strategies of Higgs and Wood (1999) align judiciously with the three-factor goal orientation model. We used their model for explaining how an individual's goal setting is influenced by feedback during a challenging work-role transition to propose how goal orientation will influence the goal setting of an individual in the wake of feedback on a challenging task.

Three hypotheses follow from our discussion of the relationship of goal orientation with effort, self-efficacy, and goal level in the context of feedback on prior task experience:

> *Hypothesis 3:* There will be a positive relationship between a learning goal orientation and the levels of effort, self-efficacy, and goal setting.
>
> *Hypothesis 4:* There will be a nonsignificant relationship between a proving goal orientation and the levels of effort, self-efficacy, and goal setting.

Hypothesis 5: There will be a negative relationship between an avoiding goal orientation and the levels of effort, self-efficacy, and goal setting.

Mediation of Goal Orientation and Task Performance

To summarize, our model investigated the relationship of goal orientation and task performance in the context of prior task experience and performance feedback. We proposed that a learning goal orientation would have positive relationships with the levels of goal setting, effort, and self-efficacy. In contrast, we expected that a proving goal orientation would have neutral relationships and that an avoiding goal orientation would have negative relationships with these three variables. In turn, motivation research demonstrates that these self-regulation variables have positive relationships with task performance. On the basis of our theory development and prior empirical research on self-regulation variables, we proposed the following mediation hypothesis:

Hypothesis 6: Effort, self-efficacy, and goal setting will mediate the relationship of goal orientation and task performance.

The relationships proposed for Hypotheses 3 through 6 are illustrated in the model presented in Figure 1. Prior research has indicated that several additional relationships should also be included in the hypothesized model. Prior goal orientation research (e.g., Elliot & McGregor, 1999; Phillips & Gully, 1997) has accounted for the influence of ability on task performance. We thus included paths from ability to Time 1 and Time 2 performance. Second, social cognitive research (Bandura, 1997) has indicated that self-efficacy can have both a direct effect and an indirect effect on performance (through its influence on goal setting). A path from self-efficacy to goal setting was thus included in the model. Third, as suggested by goal orientation theory (Dweck & Leggett, 1988), we assessed the mediation model and accounted for the influence of Time 1 performance feedback on the Time 2 mediator variables and Time 2 performance.

Method

Participants and Procedure

The sample consisted of 102 junior- and senior-level undergraduate students enrolled in a required business course at a private university in the Southwest. The class was conducted in lecture format, and all instruction was given by a professor who was a member of the research team. All study data were collected by the other two members of the research team.

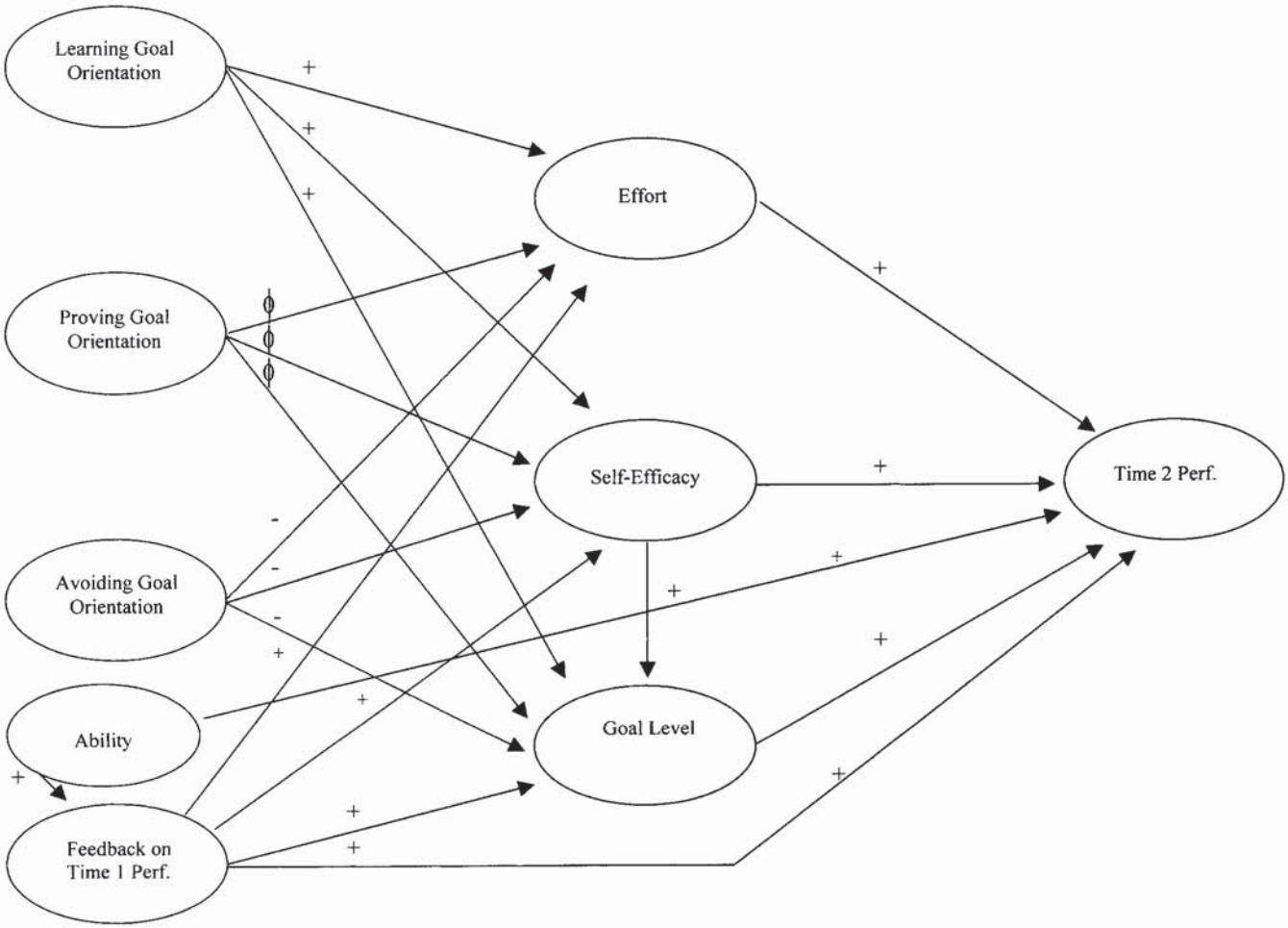

Figure 1. Proposed mediated goal orientation model. Perf. = performance; + = positive relationship; − = negative relationship; 0 = nonsignificant relationship.

At the beginning of the third class session, the students completed a survey that included demographic questions, a goal orientation instrument, and a participation consent form. During the semester, we collected additional data as described below for each measure. We obtained complete data from 95 of the 102 initial participants.

Measures

The descriptive statistics, reliability estimates, and intercorrelation coefficients of the variables in the study are presented in Table 1.

Ability. The participants were asked to sign a statement that authorized us to obtain their Scholastic Aptitude Test (SAT) scores from the university records. The participants' verbal and math SAT scores were summed to form a composite SAT score.

Goal orientation. Academic goal orientation was assessed with a 13-item instrument that was developed and validated by VandeWalle (1996). The instrument has three subscales: (a) four items that measure learning goal orientation, (b) four items that measure the proving dimension of a performance goal orientation, and (c) five items that measure the avoiding dimension of a performance goal orientation. A 7-point Likert-type response scale, ranging from 7 (*strongly agree*) to 1 (*strongly disagree*), was used for each item. For each subscale, we used the arithmetic mean of the item responses for the variable value. A confirmatory factor analysis (CFA) of the item responses indicated that the three-factor model provided a good fit to the data: $\chi^2(62, N = 95) = 74.79, p = .13$ (standardized root-mean-square residual [SRMR] = .076; comparative fit index [CFI] = .97; goodness-of-fit index [GFI] = .89). The items and the CFA parameter estimates are presented in the Appendix. All parameter estimates were significant at $p < .001$.

Performance. Performance was assessed with two exams that we administered during the 4th and 9th weeks of the course. For each exam, the format was a combination of multiple choice and short-essay questions, and each exam was worth a possible 100 points.

Goal setting. In the class session before the second exam, we measured the participants' personal exam goal using this item: "What is your personal letter grade goal for yourself on this second exam?" The response scale ranged from *A* to *F* and included + and − levels. We assigned these letter grades the numerical values of A = 11, A− = 10, B+ = 9, through F = 0.

Self-efficacy. In the class session immediately prior to the second exam, self-efficacy was measured with procedures recommended by Lee and Bobko (1994). Students indicated whether they expected to achieve each of 11 levels (from A, A−, B+ to D) on the examination and how confident they were of attaining each level (100% certain to 0%). We summed the confidence ratings across the grade levels that the students believed they could achieve (i.e., to which they had indicated a *yes* response).

Effort. In the class session immediately following the second exam, but prior to receiving their exam results, we asked the students three questions about how much time, work intensity, and overall effort they had put into the just-completed exam. The questions were adapted from Brown, Cron, and Slocum (1997) and were written in the following format, "Compared to other students, how much time did you spend studying for this exam?" The items used a 5-point response scale that ranged from 1 (*much less than average*) to 5 (*much more than average*). The arithmetic mean of the item responses was used for the variable value.

Feedback. Participants were provided knowledge of their performance by the return of their graded exam in the next class session after the first exam. The feedback consisted of comments on essay exam answers and the number of points out of 100 that they had received on the exam. The participants were also provided with the class mean and standard deviation statistics displayed on the class whiteboard. The students had previously been given a scale by which to translate their point score to a letter grade.

Task challenge. The level of task challenge was assessed by a question from the standard university end-of-the-semester course-evaluation form that asked about the difficulty level of the course. For all courses in the business school, the mean value for this question was 4.96 on a 7-point response scale. For the students in the course that participated in the study, the mean value was 5.76, which placed the course at the 16th percentile of all courses in the business school for level of difficulty. In the prior 5 years, students had rated the level of difficulty of the same course taught by the same professor in the 15th to 20th percentile range of all courses in the business school.

Results

The bivariate correlation coefficients in Table 1 indicate support for Hypotheses 1 and 2. The correlation coefficients for a learning goal orientation were positive for both exams. For a proving goal orientation, the correlation coefficient was positive and significant for Exam 1 but deteriorated to a nonsignificant level for Exam 2. Calculation of the Hotelling–Williams test for comparing interdependent correlations indicated that the decrease in correlation magnitude was statistically significant, $t(92) = 2.21, p < .05$. For an avoiding goal orientation, the correlation coefficient was negative but statistically nonsignificant for Exam 1 and was both negative and statistically significant for Exam 2.

To provide a secondary test to review for spurious relationships, we recalculated the goal orientation exam-score correlations and controlled for the SAT score as a measure of cognitive ability. The proposed relationships were quite robust as the partial correlation coefficients paralleled the simple bivariate correlation coefficients and none differed in magnitude by more than .02.

Table 1
Means, Standard Deviations, Reliability Estimates, and Intercorrelation Coefficients for Model Variables

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Learning GO	5.12	1.03	(.84)								
2. Proving GO	4.41	1.18	.29	(.80)							
3. Avoiding GO	4.31	1.16	−.27	.08	(.77)						
4. SAT score	1,079.44	159.81	.14	.00	−.09	—					
5. Exam 1 score	71.96	10.95	.26	.27	−.15	.17	—				
6. Exam 2 effort	3.60	0.93	.41	.36	.05	.10	.29	(.94)			
7. Exam 2 SE	745.12	135.35	.29	.16	−.31	.13	.37	.32	—		
8. Exam 2 goal	8.43	1.34	.43	.21	−.30	.34	.56	.34	.59	—	
9. Exam 2 score	65.33	13.66	.21	.03	−.23	.21	.24	.37	.44	.50	—

Note. $n = 95$ for all correlations. Reliability estimates (alphas) are on the diagonal in parentheses. For $r \geq |.20|, p < .05$; for $r \geq |.25|, p < .01$; and for $r \geq |.32|, p < .001$. GO = goal orientation; SAT = Scholastic Aptitude Test; SE = self-efficacy.

We used LISREL 8 (Jöreskog & Sörbom, 1993) to calculate the parameter estimates for testing Hypotheses 3 through 5 on the relationships of the goal orientation and self-regulation variables. The sample covariance matrix was used as the input data, and the correlation matrix is presented in Table 1. For each construct, we combined the observed indicators into a single-index measure equal to the arithmetic mean of the item scores. The values of the paths from the latent constructs to their observed indicators were fixed to equal the square root of the measure reliability, and the error variances of the indicators were set equal to 1 minus the measure reliability (Loehlin, 1992). On the basis of the statistics provided by Educational Testing Service (1999), we set the reliability level for the SAT score at .93, and on the basis of the procedures outlined by Anderson and Gerbing (1988), we set the reliability levels for goal level and exam performance at .95.

Estimation of the hypothesized model resulted in a fit of $\chi^2(11, N = 95) = 21.31, p = .03$ (SRMR = .079; GFI = .95; CFI = .94). The goodness-of-fit measures suggest a good fit of the data to the hypothesized model. The standardized path coefficients are presented in Figure 2. A review of the parameter estimates indicates support for at least two of the three hypothesized relationships for each goal orientation dimension. A learning goal orientation had positive relationships with effort, self-efficacy, and goal setting. A proving goal orientation had nonsignificant relationships with self-efficacy and goal setting and a positive relationship with effort. Finally, an avoiding goal orientation had the hypothesized negative relationships with self-efficacy and goal setting. The parameter estimate for the avoiding goal orientation with effort was negative but statistically nonsignificant.

We tested the mediated model proposed in Hypothesis 6 using the framework outlined by Baron and Kenny (1986). Beyond testing the relationships of independent variables and mediator variables for Hypotheses 2 through 5, two additional structural equation models were required. First, the independent variables needed to be related to the dependent variable. For this step, we removed the three mediators (goal setting, effort, and self-efficacy) from the hypothesized full model in Figure 2 and estimated the direct effect of each goal orientation dimension on Exam 2 performance. Estimation of the direct effect model resulted in a fit of $\chi^2(3, N = 95) = 11.79, p = .001$ (SRMR = .085; GFI = .96). The standardized parameter estimates for this model were consistent with the hypothesized pattern, as learning was .26 ($p < .01$), avoiding was $-.27$ ($p < .01$), and proving was $-.07$ (*ns*). Second, the effect of an independent variable on the dependent variable

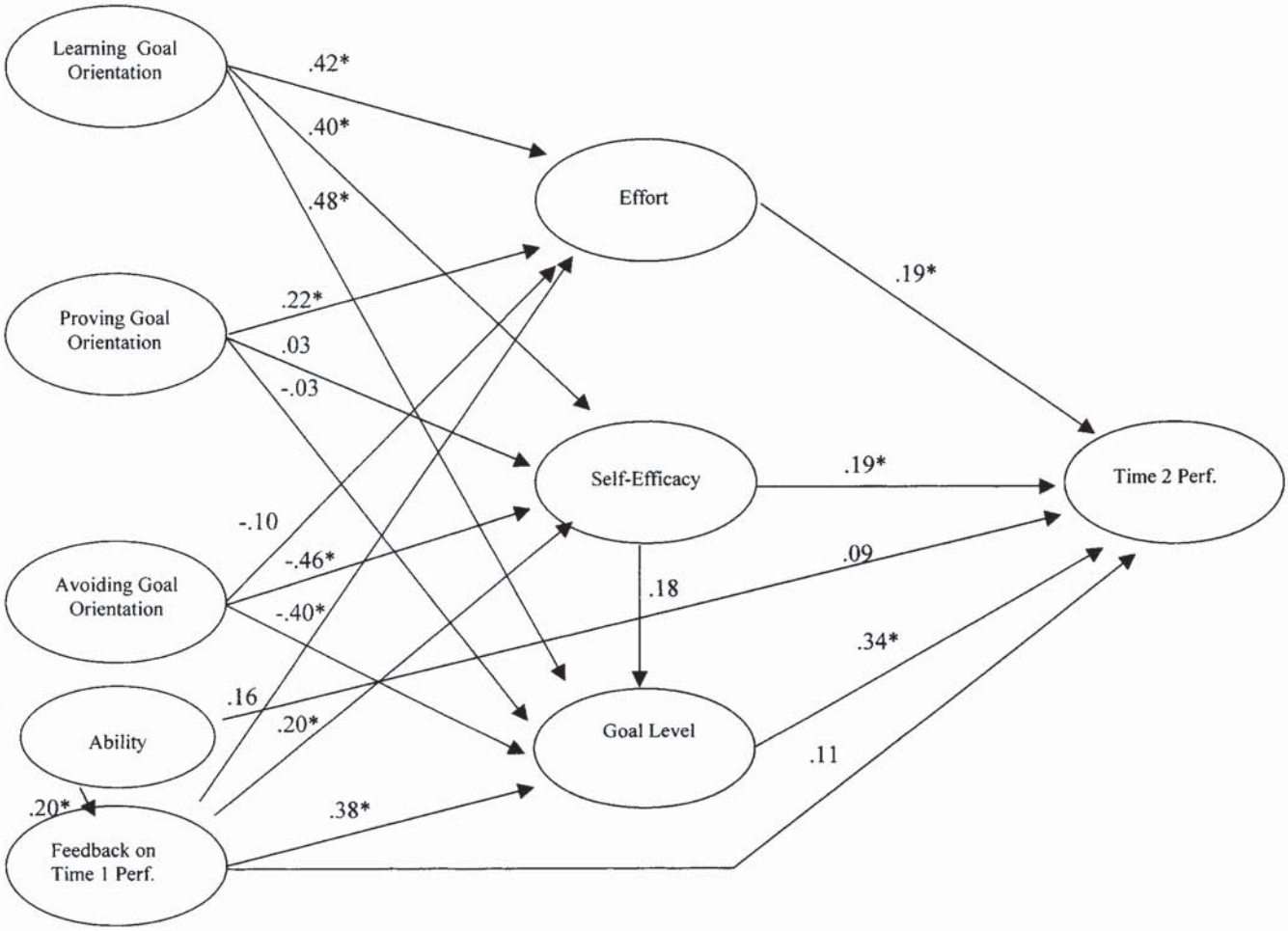

Figure 2. Mediated goal orientation model for Time 2 performance (Perf.) with standardized path coefficients for hypothesis testing. * $p < .05$.

needed to be significantly reduced or eliminated when jointly considered with the mediator variables. For this step, we added the direct relationships for each goal orientation dimension with Exam 2 performance to the full model in Figure 2. This competing, nested model produced a fit to the data of $\chi^2(8, N = 95) = 17.35$, $p = .03$ (SRMR = .076; GFI = .96). None of the standardized parameter estimates for the added direct relationships were statistically significant, as learning was −.02 (*ns*), avoiding was −.08 (*ns*), and proving was −.15 (*ns*). In addition, the parameter estimates for the mediated relationships in the model remained statistically significant. In summary, the results of the three structural equation models indicate a fit of the data to a mediated model.

Discussion

Scholars have advocated the need for empirical research to investigate the role of personality in responding to performance feedback (e.g., Colquitt & Simmering, 1998; Fedor, 1991). Addressing this need, the current study examined the relationship of goal orientation with self-regulation and task performance after receiving feedback on prior task performance. In addition, we developed our research design to incorporate two important psychometric issues from the goal orientation literature. The results of the correlation analysis and the structural equation modeling were consistent with our hypothesized relationships.

The results of the correlation analysis revealed unique relationship patterns for each goal orientation dimension with performance over time. Specifically, a learning goal orientation had a positive relationship with both exam scores. A proving goal orientation had a positive relationship with the first exam score, but this relationship became nonsignificant for the second exam. The negative relationship between an avoiding goal orientation and performance was statistically nonsignificant with the first exam but became significant for the second exam. Although it is useful to know how goal orientation is related to performance at one point in time, our results indicate that the role of goal orientation is better understood by studying a setting where individuals have multiple episodes of task experience and performance feedback.

Second, this study addresses an important call by IO psychologists (e.g., Kanfer, Ackerman, & Heggestad, 1996) to investigate the role of individual differences in the self-regulation processes of adults. We found that goal orientation was related to core constructs from three of the most important cognitive theories of motivation: expectancy theory, social–cognitive theory, and goal-setting theory. A learning goal orientation had statistically significant, positive relationships with effort, self-efficacy, and goal-setting level. A proving goal orientation had nonsignificant relationships with self-efficacy and goal setting and a positive relationship with effort. The positive relationship between a proving goal orientation and effort warrants additional research, however. Elliot and McGregor (1999) proposed that the type of effort associated with a proving goal orientation may not be as effective as the type of effort associated with a learning goal orientation. Specifically, they theorized that the effort fostered by a proving goal orientation is likely to be superficial and instrumental in nature rather than an attempt to develop a more substantial comprehension of the course materials. Finally, an avoiding goal orientation had statistically negative relationships with goal setting and self-efficacy. It is interesting to note that the avoiding goal orientation had the strongest negative relationship with self-efficacy; however, this relationship could be expected because unpleasant psychological arousal decreases self-efficacy (Bandura, 1997). Additionally, Elliot and McGregor found that a form of such arousal (i.e., test anxiety) was strongly related to an avoiding goal orientation.

Our findings for the relationships of each goal orientation dimension with the three mediators and performance outcomes support the conceptualization of goal orientation as a three-dimensional construct with learning, proving, and avoiding dimensions. These results also suggest that the concept of goal orientation needs to be more sophisticated than the adage that a learning goal orientation is good and a performance goal orientation is bad. Although the positive outcomes associated with a learning goal orientation are supported in this study, the deleterious consequences generally associated with an intense focus on performance need further consideration. Specifically, we did not find a focus on performance in an effort to look good vis-à-vis others (i.e., a proving goal orientation) to be associated with lower performance outcomes. The negative consequences of focusing on performance were associated with wanting to avoid failure rather than with wanting to outperform others. This is an important distinction in that it moves the goal orientation discussion beyond the problematic position of asserting that individuals, regardless of their level of experience, should not be concerned about their performance. On the other hand, our results suggest that wanting to look good was not enough to actually achieve superior performance in the current research setting.

These research findings also extend our understanding of the boundaries for the use of each goal orientation dimension. Several studies have found a positive relationship between a performance goal orientation (when operationalized with proving-type items) and task performance. For example, Hoover et al. (1999) reported that a proving goal orientation enhanced motivation and task performance for tasks that were simple, static, and short-term. The findings from goal orientation research, however, indicate that a high learning goal orientation should be especially valuable when a task is dynamic (Hoover et al., 1999), when new skills must be learned (Brett & VandeWalle, 1999), when feedback-seeking behavior is needed to improve performance (Butler, 1993; VandeWalle & Cummings, 1997), and when transfer of learning to a new task is required (Ford et al., 1998). The findings of this study suggest that a high learning goal orientation could also become more beneficial, relative to a high proving goal orientation, as the time to achieve competency increases and when goal achievement is needed for a challenging task. In contrast, however, we are unaware of any research that has identified a context in which an avoiding goal orientation would be recommended to maximize learning motivation or learning outcomes.

This study was conducted in a naturalistic field setting. Although an advantage of this setting was that the stakes for the participants were quite real and important, such a design also qualifies the causal inferences. Thus, an excellent complement to this field research would be a laboratory study in which precise control of the study variables could be exercised. We recommend an experimental design in which participants would work on a challenging, novel task (to minimize the impact of prior ability), and the researchers would then manipulate the sign and magnitude of the task-performance feedback as well as the reference point for

feedback-comparison standards (i.e., personal set goal, performance of others, normative standards). Such a controlled research environment could enable researchers to investigate the various inflection points for each goal orientation dimension. Specifically, how would the goal orientation factors, feedback characteristics, and comparison standards interact to influence self-regulation and task performance?[3]

The characteristics of the academic course used for our data collection are also important to note. The study participants were enrolled in a core organizational behavior course that was required for all business majors and that was also a prerequisite for a subsequent required business major course. In addition, the business school was at full enrollment capacity and all sections of this course had queues for admission. Although students might have wished that they could have avoided, transferred from, or dropped the course, the curriculum requirements and course queues severely limited such choices. In contrast to this constrained setting, it would be interesting for future research to examine the role of goal orientation when course decisions are not so constrained (e.g., free-elective options outside of the business school). We suggest that the three goal orientations would be associated with different selection and retention patterns for courses (that are based on instructor reputation for rigor, initial course performance, and perceived learning opportunities).

Finally, we address the question of if a learning goal orientation can enhance motivation and learning outcomes, how can these findings be used by educators in academic classrooms and in corporate training settings? We make several recommendations. First, social–cognitive theory provides strong evidence for vicarious learning and social modeling (Bandura, 1997). Educators can model a learning goal orientation by exposing their own intellectual curiosity and passion for learning. Second, educators can encourage their students to develop an incremental theory of ability by explaining that intellectual ability can be developed and by explicating how one develops an understanding for the discipline at hand. Dweck (1999) discusses several studies that have successfully used such interventions. Third, educators can discuss the relationship between effort and learning, and they can further advise students about which types of effort are especially productive for learning a given discipline.

[3] Interaction analysis was considered in this study, but we ultimately rejected this approach. The average Exam 1 score was 71.96 (a C grade), so the range of performance scores that were needed to observe a feedback–goal orientation interaction effect was not achieved in this naturalistic field setting. A post hoc analysis found the interaction terms to be nonsignificant for predicting outcome variables.

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(Appendix follows)

Appendix

Confirmatory Factor Analysis Completely Standardized Parameter Estimates for Goal Orientation Items

Item	Pattern coefficient		
	Factor 1	Factor 2	Factor 3
1. I prefer challenging and difficult classes so that I'll learn a great deal.	.73		
2. I truly enjoy learning for the sake of learning.	.76		
3. I like classes that really force me to think hard.	.77		
4. I'm willing to enroll in a difficult course if I can learn a lot by taking it.	.74		
5. It's important that others know that I am a good student.		.67	
6. I think that it's important to get good grades to show how intelligent you are.		.70	
7. It's important for me to prove that I am better than others in the class.		.65	
8. To be honest, I really like to prove my ability to others.		.81	
9. I would rather drop a difficult class than earn a low grade.			.48
10. I would rather write a report on a familiar topic so that I can avoid doing poorly.			.64
11. I am more concerned about avoiding a low grade than I am about learning.			.60
12. I prefer to avoid situations in classes where I could risk performing poorly.			.72
13. I enroll in courses in which I feel that I will probably do well.			.73

Note. All parameter estimates are statistically significant at $p < .001$. Factor 1 = Learning, Factor 2 = Proving, Factor 3 = Avoiding.

Received November 29, 1999
Revision received July 17, 2000
Accepted July 17, 2000 ■