Achievement Goals in the Classroom: Students’ Learning Strategies and Motivation Processes

Carole Ames and Jennifer Archer
University of Illinois at Urbana-Champaign

We studied how specific motivational processes are related to the salience of mastery and performance goals in actual classroom settings. One hundred seventy-six students attending a junior high/high school for academically advanced students were randomly selected from one of their classes and responded to a questionnaire on their perceptions of the classroom goal orientation, use of effective learning strategies, task choices, attitudes, and causal attributions. Students who perceived an emphasis on mastery goals in the classroom reported using more effective strategies, preferred challenging tasks, had a more positive attitude toward the class, and had a stronger belief that success follows from one’s effort. Students who perceived performance goals as salient tended to focus on their ability, evaluating their ability negatively and attributing failure to lack of ability. The pattern and strength of the findings suggest that the classroom goal orientation may facilitate the maintenance of adaptive motivation patterns when mastery goals are salient and are adopted by students.

Recent research on achievement motivation has focused on identifying different types of goal orientations among students, the motivational processes that are associated with these different goals, and the conditions that elicit them. These goal orientations have been contrasted as task involved versus ego involved (Maehr, 1983; Maehr & Nicholls, 1980; Nicholls, 1979, 1984; see also deCharms, 1968, 1976), as learning oriented versus performance oriented (Dweck, 1986, 1988; Dweck & Elliott, 1984), and as mastery focused versus ability focused (Ames, 1984a; Ames & Ames, 1984). Because the conceptual relations among task, learning, and mastery goals and among ego, performance, and ability goals are convergent, these perspectives have been integrated and are hereafter identified as mastery and performance goals, respectively (cf. Ames & Archer, 1987).

With a performance goal orientation, there is a concern with being judged able, and one shows evidence of ability by being successful, by outperforming others, or by achieving success with little effort. A performance goal reflects a valuing of ability and normatively high outcomes. With a mastery goal, importance is attached to developing new skills. The process of learning itself is valued, and the attainment of mastery is seen as dependent on effort.

Achievement goal orientations are presumed to differ as a function of situational demands, as well as to vary across individuals (Maehr, 1983, 1984). There is, in fact, considerable research evidence that situational demands can affect the salience of specific goals, which results in differential patterns of cognition, affect, and performance (e.g., Ames, 1984b; Ames, Ames, & Felker, 1977; Covington, 1984; Covington & Omelich, 1984). For example, when social comparison has been made salient, students have focused on their ability, and these self-perceptions have mediated performance and affective reactions to success and failure. By contrast, when absolute standards, self-improvement, or participation have been emphasized, students have focused more on their effort and task strategies.

Much of the evidence that has linked different goal orientations with specific motivational processes has amassed from laboratory studies and not from research in ongoing classroom settings (see Dweck, 1988; Nicholls, 1984, for reviews). In classroom situations, the informational cues that may serve to emphasize one goal or another are often mixed and tend to be inconsistent over time. Even students in the same classroom may differ in the degree to which they focus on certain cues, as well as how they interpret them (Brattesani, Weinstein, & Marshall, 1984; Marshall & Weinstein, 1984; Ryan & Grolnick, 1986). These individual differences may result from home influences (Ames & Archer, 1987; Parsons, Adler, & Kaczala, 1982), prior experiences (Stipek & Hoffman, 1980), or differential treatment by teachers (Marshall & Weinstein, 1986; R. S. Weinstein & Middlestadt, 1979). Thus the extent to which any student adopts a mastery or performance goal orientation depends on how each student constructs the social reality of the classroom for himself or herself (see Rosenholtz & Simpson, 1984).

The purpose of this study was to investigate how specific motivation patterns are related to the salience of mastery and performance goals in actual classroom settings. We asked the following questions: Do mastery and performance goal constructs differentiate students’ perceptions of their classroom experiences? How are the students’ perceptions of the classroom goals related to their task choices, attitudes, and beliefs about the causes of success and failure? Of most importance, we asked how students’ perceptions of classroom goals relate to their selection and use of effective learning strategies.

The importance for students of developing ways of thinking and strategies that can help them to process information, plan study activities, monitor their attention, and sustain a motivation for learning has been addressed by many (e.g., Corno & Mandinach, 1983; Pressley, 1986; Pressley & Levin, 1983). In this study, we focused on general learning strategies, those
Achievement Goal Analysis of Classroom Climate

that can be applied to multiple contexts and that ought to
enhance learning across knowledge domains. Learning strat-
egies of this type serve to regulate and monitor time, concen-
tration, effort, and comprehension (McKeachie, Pintrich, &
Lin, 1985) and are related to what others have called support
strategies (Dansereau, 1985; Thomas & Rohwer, 1986), self-
instructions and self-monitoring (Corno & Mandinach, 1983;
C. E. Weinstein & Mayer, 1986), or strategic thinking (Cov-
ington, 1985).

Although there has been considerable research on students' knowledge or awareness of these strategies, there has been little attention as to how the context of learning affects stu-
dents' actual use of these strategies (cf. McKeachie et al.,
1985; Thomas & Rohwer, 1986). We draw on findings from
experimental studies to suggest that students' use of learning strategies may be related to whether students adopt a mastery or performance goal orientation in the classroom. In experi-
mental studies, students have reported using more self-instruc-
tions and self-monitoring strategies in conditions rewarding
or emphasizing self-improvement rather than social compar-
ison (Ames, 1984b) and when they believed in the efficacy of
effort (Bandura & Schunk, 1981; Diener & Dweck, 1978;
Schunk & Cox, 1986). Similarly, recent theoretical formul-
atizations suggest that students are more likely to think about how
to do the task when they are oriented toward learning (Ni-
cholls, 1979, 1984; Nolen, 1987) or focused on their own
degree of mastery (Ames, 1984b; Covington & Omelich,
1984).

Several experimental studies also suggest that students may be more willing to pursue challenging tasks, have positive feelings toward the situation, and exhibit an adaptive attribu-
tional pattern when they adopt a mastery orientation
(Ames, et al., 1977; Dweck, 1986, 1988; Elliott & Dweck,
1988; Nicholls, Patashnick, & Nolen, 1985). Although chal-
ling tasks offer opportunities for learning, they also present
the risk of failure, thereby threatening students' sense of worth
when failure is normatively defined (Covington, 1984). As a con-
sequence, challenging tasks may be less threatening or
more attractive to students who view the situation as empha-
sizing the process of learning, encouraging effortful activity,
and de-emphasizing the negative consequences of making
errors. In addition, research from diverse perspectives has
shown that student satisfaction or enjoyment of learning is
greater when classroom environments are perceived as en-
couraging student involvement (Fry & Coe, 1980; Trickett &
Moos, 1974) and a sense of personal responsibility (Ryan,
1982; Ryan & Grolnick, 1986) and when students themselves
are committed to understanding and learning (Nicholls et al.,
1985). Last, researchers who have addressed the situational
specificity of attributions have consistently found that nor-
mative comparisons elicit attributional tendencies that are
characteristic of maladaptive motivation patterns (e.g., Ames,

Besides classroom experiences, certain learner characteris-
tics (e.g., self-perceptions of ability) may also be expected to
influence how students approach and respond to learning
tasks (Bandura, 1982; Covington, 1984; Schunk, 1984). For
example, a favorable attitude, a willingness to take risks, and
the use of effective learning strategies may be more evident
among those students who have normatively high assessments
of their ability. Recent evidence (Covington & Omelich,
1984), however, suggests that a mastery learning paradigm
may reduce the impact of perceived ability on achievement
behaviors. Nevertheless, how students approach tasks, engage
in the process of learning, and respond to the situation may
be related to their own perceived ability as well as to the
perceived goals of the environment. Thus it seems important
to examine the relative contribution of perceived ability and
perceived goals to these student variables.

To operationalize mastery and performance goals in the
context of the classroom, we first identified the theoretical
distinctions between these goals in terms of actual classroom
parameters (see Table 1). We then developed a set of questions
to assess these characteristics from the students' perspective
(see the Method section for further description). Moreover,
because we were interested in the relation between each
student's perception or interpretation of the situation and
individual motivation variables, we used the individual stu-
dent scores as the unit of analysis rather than the average
score of the students at the classroom level. There is now clear
evidence that students within the same classroom differ in
how they interpret their experiences (e.g., Blumenfeld, Pin-
trinch, Meece, & Wessels, 1982; Marshall & Weinsten, 1984,
1986; Ryan & Grolnick, 1986). Ryan and Grolnick argued
that the concept of a general classroom environment is not
sensitive to individual differences in how students give mean-
ing to classroom experiences (p. 556; see also R. S. Weinsten,
in press). Thus the likelihood that a student would use effec-
tive learning strategies and exhibit an adaptive motivation
pattern was expected to be related to how each student
perceived the salience of mastery and performance goals—
that is, how each student interpreted his or her own classroom
experiences.

In brief, then, we expected students' perceptions of the
classroom goals to be related to how they approached, engaged
in, and responded to learning tasks. On the basis of theoretical

Table 1
Achievement Goal Analysis of Classroom Climate

<table>
<thead>
<tr>
<th>Climate dimensions</th>
<th>Mastery goal</th>
<th>Performance goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success defined as...</td>
<td>Improvement, progress</td>
<td>High grades, high normative performance</td>
</tr>
<tr>
<td>Value placed on...</td>
<td>Effort/learning</td>
<td>Normatively high ability</td>
</tr>
<tr>
<td>Reasons for satisfac-</td>
<td>Working hard, challenge</td>
<td>Doing better than others</td>
</tr>
<tr>
<td>tion...</td>
<td>How students are learning</td>
<td>How students are performing</td>
</tr>
<tr>
<td>Teacher oriented to-</td>
<td>Part of learning</td>
<td>Anxiety eliciting</td>
</tr>
<tr>
<td>ward...</td>
<td>Process of learning</td>
<td>Own performance relative to others'</td>
</tr>
<tr>
<td>View of errors/mis-</td>
<td>Learning something new</td>
<td>High grades, performing better than others</td>
</tr>
<tr>
<td>takes...</td>
<td>Absolute, progress</td>
<td>Normative</td>
</tr>
<tr>
<td>Focus of attention...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reasons for effort...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation criteria...</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
formulations and prior research findings, perceived goal orientation was expected to relate to students’ learning strategies, task preferences, attitudes, and causal attributions for positive and negative outcomes.

Method

Subjects and Procedure

One hundred seventy-six students (91 boys and 85 girls) in Grades 8—11 who attended a junior high/high school for academically advanced students participated in the study. These were all students in these grades who were in attendance on the day of testing. In general, admittance to the school requires that students achieve an 80th percentile score on the Secondary School Admission Test (Secondary Admission Test, 1986).

Approximately 4–6 students were randomly selected from each English, math, science, and social studies class offered in the spring semester. Students responded to all questions for the one class from which they were selected. This class was identified at the top of each student’s questionnaire (e.g., Biology 1A).

Instruments

Goal orientation. This set of items was designed to assess students’ perceptions of the mastery and performance dimensions of classroom goal structure, as outlined in Table 1. A factor analysis on the total item sample yielded a two-factor solution that confirmed a priori classification of items into Mastery and Performance Goal categories. (Six items were eliminated because they failed to load adequately on either factor.) Coefficient alphas were acceptable for each scale: .88 for the Mastery scale and .77 for the Performance scale. The correlation between the scales was -.03.

Questionnaire items were prefaced with the heading “In this class . . . .” and students rated each item on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Examples of the 19 items constituting the Mastery scale are as follows: “The teacher makes sure I understand the work”; “The teacher pays attention to whether I am improving”; “Students are given a chance to correct mistakes”; “Only a few students can get top marks”; “I work hard to get a high grade”; and “Students feel bad when they do not do as well as others.”

Learning strategies. Students’ reported use of information processing, self-planning, and self-monitoring strategies were assessed with 15 items adapted from the 90-item Learning and Study Strategy Inventory (C. E. Weinstein, Schulte, & Palmer, 1987). Items were selected to tap strategies that are generic to the process of learning and studying. A factor analysis of the item sample revealed a single factor solution with an alpha coefficient of .84.

The items on the scale were prefaced with “In this class . . . .” and students rated each item on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Examples of the items are as follows: “I take time to plan my study schedule for _____” (subject matter identified); “When studying _____, I try to decide what I am supposed to learn rather than just read over the material”; “I try to pull together the information from class and readings”; “When I study _____, I set goals for myself”; and “I try to relate what I am studying in _____ to other things I know about.”

Table 1: Inventory (C. E. Weinstein, Schulte, & Palmer, 1987). Items were selected to tap strategies that are generic to the process of learning and studying. A factor analysis of the item sample revealed a single factor solution with an alpha coefficient of .84.

<table>
<thead>
<tr>
<th>Task challenge</th>
<th>Ability</th>
<th>Effort</th>
<th>Strategy</th>
<th>Task</th>
<th>Luck</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability</td>
<td>3.74</td>
<td>3.88</td>
<td>3.02</td>
<td>3.21</td>
<td>3.38</td>
</tr>
<tr>
<td>Effort</td>
<td>3.88</td>
<td>3.88</td>
<td>1.28</td>
<td>1.15</td>
<td>1.24</td>
</tr>
<tr>
<td>Strategy</td>
<td>3.02</td>
<td>3.02</td>
<td>1.28</td>
<td>1.15</td>
<td>1.24</td>
</tr>
<tr>
<td>Task</td>
<td>3.21</td>
<td>3.21</td>
<td>1.28</td>
<td>1.15</td>
<td>1.24</td>
</tr>
<tr>
<td>Luck</td>
<td>3.38</td>
<td>3.38</td>
<td>1.28</td>
<td>1.15</td>
<td>1.24</td>
</tr>
</tbody>
</table>

Results

The hypotheses concerned the relation between each student’s perception of the performance and mastery goal orientation of the class and his or her use of learning strategies, attitude, task choices, and causal attributions. In the analyses, therefore, we focused on examining the relation between each student’s perception or interpretation of the classroom and the individual student variables. Means and standard deviations for each variable are presented in Table 2. The first set

Table 2: Descriptive Statistics for Each Variable

<table>
<thead>
<tr>
<th>Measure</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery structure (19)</td>
<td>63.12</td>
<td>11.58</td>
</tr>
<tr>
<td>Performance structure (15)</td>
<td>52.60</td>
<td>7.38</td>
</tr>
<tr>
<td>Learning strategies (15)</td>
<td>45.03</td>
<td>10.03</td>
</tr>
<tr>
<td>Task challenge (2)</td>
<td>5.66</td>
<td>2.01</td>
</tr>
<tr>
<td>Attitude toward class</td>
<td>3.45</td>
<td>1.24</td>
</tr>
<tr>
<td>Self-perception of competence</td>
<td>3.70</td>
<td>1.01</td>
</tr>
<tr>
<td>Attributions for success</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3.74</td>
<td>1.11</td>
</tr>
<tr>
<td>Effort</td>
<td>3.88</td>
<td>1.13</td>
</tr>
<tr>
<td>Strategy</td>
<td>3.02</td>
<td>1.28</td>
</tr>
<tr>
<td>Task</td>
<td>3.21</td>
<td>1.15</td>
</tr>
<tr>
<td>Luck</td>
<td>3.38</td>
<td>1.24</td>
</tr>
<tr>
<td>Attributions for failure</td>
<td>2.51</td>
<td>1.16</td>
</tr>
<tr>
<td>Ability</td>
<td>4.07</td>
<td>1.07</td>
</tr>
<tr>
<td>Effort</td>
<td>3.43</td>
<td>1.22</td>
</tr>
<tr>
<td>Strategy</td>
<td>3.64</td>
<td>1.12</td>
</tr>
<tr>
<td>Task</td>
<td>2.74</td>
<td>1.40</td>
</tr>
</tbody>
</table>

a Number in parentheses reflects the number of items (when greater than 1) involved in computing the mean.
Correlational Analyses

Students' scores on mastery and performance scales were correlated with learning strategy, task choice, attitude, and attribution measures. As shown in Table 3, individual differences across these variables were related to the perceived structure of the classroom setting. When students perceived an emphasis on mastery goals, they reported using more learning strategies, preferred tasks that offered challenge, and had a more positive attitude toward their class. This pattern of relation is consistent with theoretical assumptions about the consequences of mastery achievement goals (Dweck, 1988; Nicholls, 1984) and provides field-based evidence of relations that heretofore have been demonstrated in experimental settings (e.g., Ames, 1984b; Bandura & Dweck, 1981). Students' perceptions of performance goal orientation were not related to their use of learning strategies or task choices, but they were negatively, although not strongly, related to attitudes and self-perceptions of ability.

Causal attributions showed a disparate pattern of relations with the perceived mastery and performance structure. Although effort attributions for success were correlated with both mastery ($r = .37$) and performance ($r = .14$) goal orientation, a $T^2$ test (Steiger, 1980) for testing differences between nonindependent correlations showed that the perceived covariation between effort and success was more related to the perceived mastery orientation ($p < .05$). In addition, perceived mastery goal orientation was strongly related to a tendency for students to credit the teacher when they performed well and not blame the teacher when they performed poorly. Positive attitudes and crediting the teacher apparently were not the result of viewing the classroom as easy, insofar as perceived mastery was negatively correlated with attributions to task ease. In contrast, students' perception of the performance, but not mastery, goal emphasis was moderately related to a tendency to attribute failure to lack of ability and to difficult work. Last, mastery and performance both were related to strategy attributions; that is, students tended to believe that "good" study strategies were important to doing well. However, we do not know how students interpreted "good."

Regression Analysis

Prior research suggested that students' perceived ability is an important predictor of learning strategies, task choices, and attitudes. Therefore, hierarchically ordered regression analyses were used to assess the contribution of perceived goal orientation in relation to the contribution of perceived ability to the aforementioned measures. Self-perception of ability was entered first, followed by the perceived performance goal orientation, then the perceived mastery goal orientation, and the interaction terms. The results are presented in Table 4. As expected, student's perceived ability was a significant predictor of learning strategies, task choices, and attitudes. However, the perceived mastery orientation remained a highly significant predictor of learning strategies (partial $r = .49$), preference for challenge (partial $r = .34$), and positive attitudes (partial $r = .63$), after ability was entered. Furthermore, the absence of interactions between perceived ability and goal orientation showed that the highly significant effects of mastery goal orientation did not depend on the value or level of perceived ability.

Group Comparisons

Because mastery and performance were shown to be independent dimensions ($r = -.03$) of how students perceived the learning environment, it was of additional interest to examine differences among profiles of students. For example, how do students who view their class as having both high mastery and high performance goal orientations differ from those who view their class as having high mastery but low performance goals?
To make these comparisons, students were divided into four groups on the basis of a median split on each scale. Thus students with above-median scores on both the performance and mastery scales were classified as a high-high (Hi-Hi) group, and remaining students were categorized in low-performance–high-mastery (Lo-Hi), high-performance–low-mastery (Hi-Lo), and low-performance–low-mastery (Lo-Lo) groups (see Table 5). One-way analyses of variance (ANOVA) and Tukey Honestly Significant Difference (HSD) group comparisons were used to test differences among the four groups on each measure. In Table 5 we present the statistics for these group comparisons.

The ANOVA findings showed significant differences on several measures, and the group comparisons showed a rather consistent pattern of differences on the learning strategy, task choice, and attitude measures. Table 5 shows that the source of the difference was between the high-mastery groups (i.e., students' rating the class high on mastery) and the low-mastery groups (students' rating their class low on mastery). There were no differences within the high-mastery groups or within the low-mastery groups. For example, students perceiving the class as high in mastery reported using more learning strategies than did students perceiving the class as low in mastery, regardless of how students perceived the emphasis on performance goals in the classroom. Where significant differences were found, the group comparisons on attributions (particularly effort and teacher attributions) were in this same direction, although the pattern was not as clearly demarcated.

### Discussion

The findings from this study showed that mastery and performance goals provide a meaningful way of differentiating students' perceptions of the classroom learning environment. Students' perceptions of mastery and performance goals showed different patterns of relation with learning strategies, preference for challenging tasks, attitude toward the class, and beliefs about the causes of success and failure. The consistent pattern of findings across a number of discrete variables suggest that a mastery goal orientation may foster a way of thinking that is necessary to sustain student involvement in learning as well as increase the likelihood that students will pursue tasks that foster increments in learning.

When students perceived their class as emphasizing a mastery goal, they were more likely to adopt effective learning strategies, prefer tasks that offer challenge, like their class more, and believe that effort and success covary. These relations were maintained and remained strong when the effects of perceived ability were partialled out. Although self-perceptions of ability may be expected to underlie a motivation or willingness to use learning strategies, our findings suggest that a mastery goal emphasis may provide a context that overrides the contribution of perceived ability to achievement behaviors. Such an interpretation is consistent with other research (Covington, 1984; Covington & Omelich, 1984) that has shown that the impact of learner characteristics (i.e., self-perceptions of ability) on achievement behavior can be moderated under a mastery learning paradigm. Moreover, the facilitating effects of a mastery-oriented learning environment on these variables were not diminished by the presence of performance cues.

Although a variety of programs for teaching specific study and thinking skills have evolved, our findings suggest that when we ask why students fail to use effective learning strategies, we may not be giving enough attention to the conditions of learning as a factor related to the use of learning strategies. We may need to take stock of how the student perceives the goal orientation of the achievement setting. The degree to which a mastery orientation characterized the classroom learning environment was a critical factor predicting students' use of those strategies that guide and regulate attention and learning activities. This finding is particularly striking for this group of academically advanced students. Although high-achieving students may be expected to be more knowledgeable and aware of effective learning strategies, their reported use of strategies was dependent on how they perceived the goal emphasis of the class.

Whether children opt for challenge in projects that they select for themselves or prefer projects that ensure success has important implications for long-term learning. Similarly, positive attitudes toward a class may very well provide a foundation for a continuing interest in an area. Parallelizing the findings on learning strategies, students' task choices and attitudes were distinctly a function of the perceived mastery orientation of the classroom.

The relation between mastery and performance goals in the classroom is particularly noteworthy. The independence of these dimensions allowed us to compare different profiles of student perceptions. These findings showed that it was the degree to which the classroom climate emphasized mastery, rather than performance, that was predictive

### Table 5

<table>
<thead>
<tr>
<th>Variable</th>
<th>Lo-Lo (n = 36)</th>
<th>Hi-Lo (n = 48)</th>
<th>Lo-Hi (n = 51)</th>
<th>Hi-Hi (n = 41)</th>
<th>F(3, 172)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategies</td>
<td>39.64**</td>
<td>41.56</td>
<td>47.67**</td>
<td>50.56**</td>
<td>12.91**</td>
</tr>
<tr>
<td>Task challenge</td>
<td>5.17ab</td>
<td>4.75</td>
<td>6.39</td>
<td>6.12ab</td>
<td>7.11**</td>
</tr>
<tr>
<td>Attitude</td>
<td>2.78ab</td>
<td>2.65</td>
<td>4.08</td>
<td>4.22</td>
<td>23.70**</td>
</tr>
<tr>
<td>Attribution success</td>
<td>3.75</td>
<td>3.46</td>
<td>3.92</td>
<td>3.85</td>
<td>1.65</td>
</tr>
<tr>
<td>Ability</td>
<td>3.28</td>
<td>3.69</td>
<td>4.03</td>
<td>4.42</td>
<td>8.17**</td>
</tr>
<tr>
<td>Effort</td>
<td>3.28</td>
<td>3.69</td>
<td>4.03</td>
<td>4.42</td>
<td>8.17**</td>
</tr>
<tr>
<td>Strategy</td>
<td>2.39</td>
<td>3.10</td>
<td>3.00</td>
<td>3.49</td>
<td>5.19*</td>
</tr>
<tr>
<td>Task</td>
<td>3.56</td>
<td>3.48</td>
<td>2.90</td>
<td>2.98</td>
<td>3.94*</td>
</tr>
<tr>
<td>Teacher</td>
<td>2.97</td>
<td>2.94</td>
<td>3.75</td>
<td>3.81</td>
<td>7.07**</td>
</tr>
<tr>
<td>Attribution failure</td>
<td>2.11</td>
<td>2.88</td>
<td>2.47</td>
<td>2.49</td>
<td>2.56</td>
</tr>
<tr>
<td>Ability</td>
<td>3.97</td>
<td>3.94</td>
<td>4.16</td>
<td>4.22</td>
<td>0.93</td>
</tr>
<tr>
<td>Effort</td>
<td>3.14</td>
<td>3.58</td>
<td>3.33</td>
<td>3.61</td>
<td>1.45</td>
</tr>
<tr>
<td>Strategy</td>
<td>3.14</td>
<td>3.58</td>
<td>3.33</td>
<td>3.61</td>
<td>1.45</td>
</tr>
<tr>
<td>Task</td>
<td>3.31</td>
<td>4.02</td>
<td>3.49</td>
<td>3.68</td>
<td>3.39</td>
</tr>
<tr>
<td>Teacher</td>
<td>3.19</td>
<td>3.06</td>
<td>2.26</td>
<td>2.50</td>
<td>4.91*</td>
</tr>
</tbody>
</table>


* p < .01. ** p < .001.
of how students chose to approach tasks and engage in learning. This suggests that the presence of performance cues may not inhibit some aspects of achievement behavior when mastery cues are salient. Jagaciński and Nicholls (1987) also addressed this point. They found that the presence of social comparison information did not reduce students' self-evaluations when they were task involved (i.e., working on projects that they enjoyed).

The attributional pattern associated with mastery and performance goals in the classroom was supportive of prior research in experimental settings. When a performance orientation was salient to students, they tended to focus on their ability, judging their ability to be lower and implicating their ability as a cause of failure. Attribute failure to lack of ability, in addition to the tendency to see the work as too difficult, reflects a maladaptive motivational pattern that is not likely to support subsequent effort. Conversely, perceiving a covariation between effort and success, as students who perceived a mastery-oriented climate did, reflects a more adaptive or success-oriented motivation. Others (e.g., McCombs, 1984) have suggested that perceiving strategies as important to learning is also an important component of achievement-motivated behavior. Although our findings showed that strategy attributions were positively related to both performance and mastery goals, we do not know how students interpreted "used good strategies" as an attributional factor. Inasmuch as others have suggested that strategy attributions should be assessed, it also appears that "strategy" is too broad term and must be defined more specifically for meaningful interpretations to be made.

This study involved a rather homogeneous group of students with respect to achievement level. All students had scored above the national average on standardized achievement tests. Our finding that the motivation patterns of these high-achieving students were responsive to the perceived goal orientation of the classroom is particularly noteworthy. Moreover, even in this restricted range of ability, students' self-perceptions of ability were found to vary considerably and mediate motivated cognitions. In a population with a greater range of actual ability, students' self-perceptions of ability were found to mediate motivated cognitions. In a ability, students' self-perceptions of ability were found to

Implications

Although there has been extensive research on classroom climate over the years, much of this research has focused on student achievement as the outcome measure (see Johnson, Maruyama, Johnson, Nelson, & Skon, 1981, for review). Our findings, however, showed that students' perceptions of classroom climate were related to specific motivational variables that have significant implications for the development of self-regulated learning as well as a long-term involvement and interest in learning (i.e., a mastery-oriented achievement pattern).

Prescriptions for changing the goal structure of classroom learning have often focused on decreasing the emphasis that is placed on social and normative comparisons. Our findings, in corroboration with other evidence (e.g., Ames, 1984a; Marshall & Weinstein, 1984; Rosenholtz & Simpson, 1984), suggest that such a plan would have the effect of reducing students' tendency to focus on their ability and evaluate their ability negatively. At the same time, how do we get students to engage in adaptive motivation patterns? In other words, how do we get students to focus on effort, use appropriate strategies, make choices that are challenging and engaging, and develop a positive orientation toward learning? Exhorting teachers to decrease the emphasis on social comparison may not ensure that a performance orientation will be supplanted with a mastery orientation. Thus although a reduction in students' tendency to engage in maladaptive thought patterns may be associated with a decreased emphasis on social comparison, it appears that a mastery goal must be salient to students to facilitate an adaptive motivation pattern.

Our findings also suggest that interventions aimed at modifying attributions and training of learning strategies may not have lasting effects if the classroom does not support the targeted outcomes of the intervention. A mastery, but not performance, structure provides a context that is likely to foster long-term use of learning strategies and a belief that success is related to one's effort. Similarly, goal-setting interventions that are aimed at getting students to establish realistic but challenging goals may be further enhanced when a mastery structure is in place.

Modifying or changing the nature of students' experiences in the classroom may provide a viable way of redirecting students' achievement goal orientation. Changing the classroom structure may not help some students who lack certain skills, who are not aware of critical learning strategies, and who, as a result of many accumulated experiences, have adopted a belief that they are not able. Although these students may need to learn new skills, modifying the goal structure of the classroom in such a way that mastery goals are salient and are adopted by students may also be necessary to elicit adaptive motivation patterns.

References


Pressley, M. (1986). The relevance of the good strategy user model to the teaching of mathematics. Educational Psychologist, 21, 139-161.


ACHIEVEMENT GOALS AND LEARNING STRATEGIES

Educational Psychology, 78, 201–209.

Received February 12, 1987
Revision received January 11, 1988
Accepted January 28, 1988

Instructions to Authors

For further information on content, authors should refer to the June 1980 issue of this journal (Vol. 72, No. 3, p. 277). Authors should prepare manuscripts according to the Publication Manual of the American Psychological Association (3rd ed.). All manuscripts must include an abstract of 100–150 words typed on a separate sheet of paper. Typing instructions (all copy must be double-spaced) and instructions on preparing tables, figures, references, metrics, and abstracts appear in the Manual. Also, all manuscripts are subject to editing for sexist language.

APA policy prohibits an author from submitting the same manuscript for concurrent consideration by two or more journals. APA policy also prohibits duplicate publication, that is, publication of a manuscript that has already been published in whole or in substantial part in another journal. Prior and duplicate publication constitutes unethical behavior, and authors have an obligation to consult journal editors if there is any chance or question that the paper might not be suitable for publication in an APA journal. Authors of manuscripts submitted to APA journals are expected to have available their raw data throughout the editorial review process and for at least 5 years after the date of publication. Authors will be required to state in writing that they have complied with APA ethical standards in the treatment of their sample, human or animal, or to describe the details of treatment. (A copy of the APA Ethical Principles may be obtained from the APA Ethics Office, 1200 17th Street, N.W., Washington, DC 20036.)

The Journal accepts brief reports of research studies. This category is intended for well-designed studies that replicate or extend previous work but do not merit a large amount of space. Brief reports are published in order of receipt, independent of receipt of regular articles. To ensure that a report does not exceed the maximum three journal pages, follow these instructions: (a) Set the typewriter to a 48-space line and type the text. (b) Count the number of lines, excluding the abstract (75–100 words), title, byline, and acknowledgments, but including references, headings, figures, and tables (the latter should be kept to a minimum). If the number of lines exceeds 250, shorten the material.

Because the reviewers have agreed to participate in an anonymous reviewing system, authors submitting manuscripts are requested to include with each copy of the manuscript a cover sheet that shows the title of the manuscript, the authors’ names and institutional affiliations, the date the manuscript is submitted, and footnotes identifying the authors or their affiliations. The first page of the manuscript should omit the authors’ names and affiliations but should include the title of the manuscript and the date it is submitted. Every effort should be made by the authors to see that the manuscript itself contains no clues to their identities.

Authors should submit manuscripts in quadruplicate. All copies should be clear, readable, and on paper of good quality. A dot matrix or unusual typeface is acceptable only if it is clear and legible. Dittoed and mimeographed copies are not acceptable and will not be considered. Authors should keep a copy of the manuscript to guard against loss. Mail manuscripts to the Editor, Robert C. Calfee, School of Education, Stanford University, Stanford, California 94305.