Goal Orientation, Academic Achievement, and Depression: Evidence in Favor of a Revised Goal Theory Framework

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The objective of this investigation was to evaluate and expand the goal-orientation model of depression vulnerability proposed by B. M. Dykman (1998), which posits that a performance orientation creates a vulnerability to depression through repeated failure. This hypothesis was tested in 5 studies with students in Grades 5 and 6. A performance-approach goal orientation was associated positively with achievement, effort, and persistence and negatively with anxiety and depression. Stress and causal components of the theory were supported by results of structural equation modeling, which suggested that negative affect, low achievement, and depression are correlates of performance-avoidance goals. Empirical evidence supported the hypothesis that early negative effects of a performance-approach orientation may be due to the presence of avoidance motivation. Findings suggest that dichotomizing performance goal orientations is instrumental to a sound understanding of motivation, achievement-related processes, and depression.

Keywords: goal orientations, depression, anxiety, affect

Depression in children and adults has become more prevalent recently, and rates have increased between 10% and 17% in the general population (Abela & D’Allesandro, 2002; Nolen-Hoeksema, Girgus, & Seligman, 1992). The respective rates for young children are between 10% and 15% (Smucker, Craighead, Craighead, & Green, 1986). The above quoted rates indicate having moderate to severe depression at least once in a lifetime. Given the strong association between depression, school adjustment, and academic achievement, the need for theoretical models to account for these depressive tendencies in academic settings emerges.

Early researchers proposed diathesis–stress cognitive models in which depressogenic schemata lie latent until they are activated by relevant stressors (Abramson, Metalsky, & Alloy, 1989; Beck, 1967). The combination of depressogenic tendencies (diathesis component) and the introduction of a stressor were held responsible for depression in adults. According to Abela and D’Allesandro (2002), when depressogenic schemata are activated, they trigger a complex system of negative thoughts and cognitions “that contribute to the onset of a pattern of negative self-referent information processing characterized by systematic errors in thinking” (p. 112). This negative pattern of thinking is not presumed to emerge in individuals not having vulnerability (Miranda, 1992).

Although most studies failed to demonstrate cognitive differences between depression-prone and nonvulnerable individuals (e.g., Barnett & Gotlib, 1988), little attention has been given to emotional and motivational factors preceding a stressor (e.g., Dickson & MacLeod, 2004). Consequently, diathesis–stress models have had limited success in explaining depression. Particularly in the academic domain, several cognitive and affective variables have been proposed to account for depression proneness (e.g., Boggiano, 1998). For example, failure to achieve academic goals may be the stress factor that creates a proclivity for depression, especially if failure is long lasting. By pursuing academic goals, students attempt to gain a sense of meaning, purpose, and direction while developing at the same time. Failure to achieve these goals can lead to feelings of futility and despondency, as normative comparisons will reveal to the person how inadequate he or she is (Bandura, Pastorelli, Barbaranelli, & Caprara, 1999). Several researchers have suggested that personal goals and strivings are facilitators for psychological growth, subjective well-being, and life satisfaction (Sheldon, Kasser, Smith, & Share, 2002). Furthermore, failure to achieve the desired end states by pursuing personal goals can lead to a series of aversive experiences, which may produce a susceptibility to depression. Particularly for young children, failure to approach desired outcomes in school can be debilitating and can lead to hopelessness, depression, and a generalized sense of lack of control (Abramson, Metalsky, & Alloy, 1989).

Given that academic failure can have such debilitating effects on students’ social and emotional development and sense of control, and that it promotes avoidance behaviors (e.g., Gray, 1982), it is of paramount importance to understand the factors that can explain the depressogenic tendencies in school-age children. Dykman (1998) suggested that what is needed is “a vulnerability factor that is active or in motion prior to the occurrence of a negative event and that is capable of exerting a continuous influence on the depression-prone person’s functioning” (p. 140). Shifting to the area of personal strivings and their relationship to motivated behavior, Dykman drew from the work of Dweck (1986, 1988) in which one’s implicit theories of learning and approach to a task determine subsequent engagement and achievement. The essence of Dykman’s goal-orientation model of depression vulnerability lies on the...
premise that a person’s strivings to prove his or her fundamental worth, competence, and likability (i.e., generalized performance orientation) can account for depression proneness.

Dykman (1998) added that what contributes to depression resistance is the need for growth, learning, and improvement by use of internal self-referential standards (i.e., mastery orientation). He proposed that the two types of individuals (mastery or performance oriented) use distinctly divergent cognitions to appraise and interpret events. For example, for performance-oriented individuals, their focus on proving their competence, worth, and likability with normative evaluative standards has implications for how they view failures. Threats to self-worth when a task is challenging can be debilitating for one’s regulation in academic behaviors (see Harackiewicz, Barron, & Elliot, 1998; Midgley, Kaplan, & Middleton, 2001). Dykman added that stress can be so severe that the emotional and behavioral reactions could resemble a depression-like episode. The mediating variable that underlies depression is anxiety and negative affect arising from feeling incapable to perform at desired levels. On the contrary, for mastery-oriented individuals, engagement in a task arises from an inherent need for growth, learning, and improvement and has been considered a consequence of secure attachment (Bowlby, 1988). Even in the case of failure, mastery-oriented individuals appraise the situation as an opportunity to learn and grow from their mistakes. Thus mastery goals are not expected to possess the debilitating consequences hypothesized to operate with performance-oriented individuals.

Consequently, it has been suggested that the two motivational forms engage in diverse regulatory systems. In the period of time preceding an activity, performance-oriented individuals are expected to have elevated anxiety as soon as their self-worth is threatened and when they face a challenging task. If performance-oriented individuals keep pursuing a task without being successful, their anxiety may most likely elevate to extreme levels, resulting in the inability to regulate emotions and behaviors. The immediate effects may be effort withdrawal, negative affect, diminished self-esteem, decreased positive affect, and depression. In other words, the behavior of performance-oriented individuals will resemble a bifurcation in a catastrophe model (Poston & Stewart, 1978) with significant losses in self-esteem. On the contrary, mastery-oriented individuals are not expected to form judgments of inadequacy, as they do not view an achievement situation as an evaluation of their capabilities. Thus, anxiety should be absent both prior to and in the aftermath of a challenging task. Although performance may be at low levels for mastery-oriented individuals as well, the absence of negative emotional state should keep their self-esteem unaffected.

Thus, the purpose of the present studies was to evaluate the above hypotheses on how goal orientations may account for depression proneness and resistance, particularly given the dichotomization of performance goals (Elliot & Harackiewicz, 1996) and the presence of a possible synergy in goals (Barron & Harackiewicz, 2001). It will also be of interest to appraise how these processes will unfold for elementary school children, as most studies have employed college student (convenience) samples. Less research using goal proneness and resistance, particularly given the dichotomization of performance goals (Elliot & Harackiewicz, 1996) and the presence of a possible synergy in goals (Barron & Harackiewicz, 2001). It will also be of interest to appraise how these processes will unfold for elementary school children, as most studies have employed college student (convenience) samples. Less research using goal proneness and resistance, particularly given the dichotomization of performance goals (Elliot & Harackiewicz, 1996) and the presence of a possible synergy in goals (Barron & Harackiewicz, 2001). Aims of Present Studies

Study 1 tested the hypothesis that performance goals (approach or avoidance) relate highly to indices of anxiety and depression. Study 2 tested the hypothesis that performance-oriented students (approach or avoidance) are highly anxious prior to a stressful event to protect their self-worth. Study 3 examined the hypothesis that mastery, performance-approach, and performance-avoidance students would react differently following failure. Study 4 evaluated whether persistence and effort can be accounted for by a student’s adoption of various goal orientations. Finally, Study 5 examined all hypothesized relationships using a full path analysis model, thus, simultaneously evaluating the regulatory properties of various goal orientations.

Study 1: Goal Orientation and Psychopathology

Method

Participants and Procedure

Participants in Study 1 were 214 students in 5th or 6th grade (115 boys and 99 girls). A questionnaire was administered by class teachers, who directed students on how to complete the scale. The teachers stressed to the students the fact that their participation in the study would by no means affect their term grade (in mathematics). Students were given a series of trait and state measures of achievement motivation, personality, and psychopathology. For the state affectivity measures, students were asked to circle the adjectives that best described how they felt about mathematics recently.

Measures

Goal orientations. We assessed four goal orientation constructs—performance approach, mastery, performance avoidance, and multiple goals (i.e., additive mastery with performance-approach term)—with items from previously used scales. Mastery was assessed with 8 items. Three were adapted from Elliot and Church, (1997), three from Lethwaite and Piparo, (1993) and two from the Patterns of Adaptive Learning Survey (Ablard & Lipschultz, 1998), Performance approach was assessed with 14 items. Four were adapted from Elliot and Church (1997), six from Lethwaite and Piparo (1993), and four from Thorkildsen and Nicholls (1998). The mastery items assessed the importance of learning math, understanding math, understanding how exercises are solved, improving day by day, not making mistakes, learning stuff not known before, doing well in math, and so forth. The performance-approach items assessed two dimensions: competence and likability. The content of the items measuring competence focused on the importance of outperforming classmates, getting excellent grades, getting the best grade in class, showing your friends how good you are, having classmates try to be like you, standing out from the crowd in math, showing your classmates how smart you are, finishing assignments first, being the only student to answer the teacher’s questions, and being the top student in math. The respective items on likability stressed the importance of having good relationships with classmates, having a good time with classmates, and having people say how good you are. Worth was not incorporated in the assessment of performance approach because it was too abstract of a concept for elementary school students. Performance avoidance was assessed with a modified version of Elliot and Church’s (1997) subscale, adjusted for that age group. A sample item was “Would you prefer that math not be graded?” Internal consistency estimates for the mastery subscale were .92, for the performance-approach subscale they were .91, and for the performance avoidance subscale they were .68. The means and standard deviations of the goal orientation subscales were as follows: $M_{mastery} = 6.3$ (SD$_{mastery} = 1.0$), $M_{performance approach} = 5.7$ (SD$_{performance approach} = .84$), and $M_{performance avoidance} = 4.7$ (SD$_{performance avoidance} = .70$).

Samples for Studies 1 and 2 were drawn from a large population of fifth and sixth grade students in 15 public schools in a mid-sized city in the Midwest. A total of 173 students participated in Study 1, and 159 students participated in Study 2. Participants were of mixed gender (60 boys and 113 girls). A questionnaire was administered by class teachers, who directed students on how to complete the scale. The teachers stressed to the students the fact that their participation in the study would by no means affect their term grade (in mathematics). Students were given a series of trait and state measures of achievement motivation, personality, and psychopathology. For the state affectivity measures, students were asked to circle the adjectives that best described how they felt about mathematics recently.
= 1.3). The bivariate correlations were $r_{\text{mastery/performance approach}} = .40$, $r_{\text{mastery/performance avoidance}} = .04$, and $r_{\text{performance approach/avoidance}} = .21$.

**Depression.** Depression was assessed with the Children’s Depression Inventory (CDI, Kovacs, 1992). The CDI consisted of 27 self-report items, each including three statements, scored 0–2 (with 2 indicating severity in that characteristic). The item regarding suicide was excluded, as it was deemed inappropriate for school-age children. According to Cole, Hoffman, Tram, and Maxwell (2000), the CDI measures three factors: social self-esteem, oppositional-misbehavior, and dysphoria-sadness. Sample items were as follows: for social self-esteem, “I do not have any friends”; for oppositional-misbehavior, “I am bad all the time”; and for dysphoria-sadness: “I am sad all the time.” A number of studies supported the reliability and validity properties of the scale (Cole et al., 2000; Kovacs, 1992). Internal consistency estimates ranged from .56 to .78.

**Anxiety.** Symptoms of anxiety were assessed with the Anxiety subscale of the Revised Children’s Manifest Anxiety Scale (RCMAS, Reynolds & Richmond, 1978). According to Cole et al. (2000), the 28 items of the RCMAS measure three dimensions: social alienation, worry-oversensitivity, and physiological concerns. The scaling of the instrument was modified on the basis of suggestions made by Cole et al. (2000) to increase its sensitivity to assess anxiety. Thus, the yes-no response was substituted by a 3-choice scaling: “yes” was used if the item was true most of the time, “sort of” if the item was partially true, and “no” if the item was false. The anxiety subscale was modified on the basis of suggestions made by Cole et al. (2000) to increase its sensitivity to assess anxiety. Thus, the yes-no response was substituted by a 3-choice scaling: “yes” was used if the item was true most of the time, “sort of” if the item was partially true, and “no” if the item was false.

**Negative affectivity.** Various indices of negative affectivity were assessed with the children’s version of the Positive and Negative Affect Schedule (PANAS-C; Laurent et al., 1999). Negative affectivity has been defined as one’s sense of distress and is expressed with disengagement from tasks and interactions with the environment. Although the PANAS-C was developed to measure positive and negative affectivity, Lonigan, Hooe, and Corinne (1999) proposed the presence of two negative affectivity factors, namely anger and fearful. Adjectives for anger were “hostile,” “irritable,” and “upset,” and for fearful they were “afraid,” “ashamed,” “distressed,” “guilty,” “jittery,” “nervous,” and “scared.” Laurent et al. (1999) demonstrated high convergent and discriminant validity with measures of anxiety and depression. Earlier, Watson and Clark (1992) and Lonigan et al. (1999) reported internal consistency estimates of the scales in the .80s–.90s range, and 2-month test–retest reliability coefficients of .59–.71. In the present study alphas ranged from .69 to .73.

**Self-esteem, control beliefs–luck.** Self-esteem was assessed with Rosenberg’s (1965) Self-Esteem Inventory, which has been widely used in previous research. Rosenberg (1979) reported test–retest reliability coefficients of .88 and convergent validity coefficients of .83. The scale consists of 10 bidimensional items. A sample item was “I feel useless at times.” Alpha was .65. Control beliefs were assessed with Skinner’s (1995) 3-item Luck subscale. A sample item was “It is a matter of luck to get good grades.” Alpha of the subscale was .76.

### Results and Discussion

Table 1 displays the intercorrelations among measures of depression, anxiety, self-esteem, and goal orientations. Results indicated that a performance-approach orientation did not correlate positively with anxiety, negative affect, and depression. Instead, performance-avoidance orientation correlated strongly with anxiety and depression, possibly accounting for the early negative effects assigned to Dykman’s (1998) generalized performance orientation. Mastery orientation correlated negatively with indices of anxiety and depression, and these correlations were in accord with predictions both of Dykman’s (1998) propositions and of revised goal theory (Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002). In Dykman’s (1998) study the correlations between mastery orientation and anxiety/depression were negative and similar to those of the present study; however, the correlations between performance orientation and anxiety/depression were strong and positive, contradicting those of performance-approach individuals. The correlation between mastery and performance-approach orientations was .40, suggesting that even though these constructs share common variance, they are also substantially different from each other.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mastery</th>
<th>Performance approach</th>
<th>Performance avoidance</th>
<th>Multiple goals*</th>
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<tr>
<td>Anxiety</td>
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<td></td>
</tr>
<tr>
<td>Trait negative affectivity total score</td>
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<td>-.240**</td>
<td>-.062</td>
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<tr>
<td>Trait negative affectivity fearful</td>
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<td>.021</td>
<td>-.234**</td>
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<tr>
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<td>.010</td>
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<tr>
<td>State negative affectivity fearful Time 1</td>
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<td>-.055</td>
<td>.231**</td>
<td>-.183**</td>
</tr>
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<td>.002</td>
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<td>-.090</td>
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<td>Revised Children’s Manifest Anxiety Scale</td>
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<td>-.087</td>
<td>.282**</td>
<td>-.109</td>
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<td>Social alienation</td>
<td>-.197**</td>
<td>-.076</td>
<td>.152</td>
<td>-.156*</td>
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<tr>
<td>Worry-oversensitivity</td>
<td>-.040</td>
<td>-.065</td>
<td>.314**</td>
<td>-.064</td>
</tr>
<tr>
<td>Physical concerns</td>
<td>-.061</td>
<td>-.089</td>
<td>.203</td>
<td>-.091</td>
</tr>
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<td>Self-esteem, efficacy, control</td>
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<tr>
<td>Rosenburg’s Self-Esteem Inventory</td>
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<td>-.154*</td>
<td>.166*</td>
<td>-.262**</td>
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<tr>
<td>Skinner’s Luck subscale</td>
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<td>.076</td>
<td>-.167*</td>
<td>.157*</td>
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<tr>
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<td>Children’s Depression Inventory</td>
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<td>-.186*</td>
<td>.205**</td>
<td>-.278**</td>
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<tr>
<td>Social self-esteem</td>
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<td>-.154*</td>
<td>.150*</td>
<td>-.292**</td>
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<tr>
<td>Oppositional-misbehavior</td>
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<td>-.170*</td>
<td>.169*</td>
<td>-.210**</td>
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<tr>
<td>Dysphoria-sadness</td>
<td>-.141*</td>
<td>-.140*</td>
<td>.180**</td>
<td>-.168*</td>
</tr>
</tbody>
</table>

*a Combined mastery and performance-approach orientations.

*p < .05. **p < .01. ***p < .001.
each other. Similar correlations have been reported in previous studies that used the mastery-performance approach distinction (e.g., Elliot, McGregor, & Gable, 1999). On the basis of the notion of a multiple-goal perspective (e.g., Pintrich, 2000), several researchers attempted to combine both orientations to create a composite score that reflects a multiple orientation (e.g., Barron & Harackiewicz, 2001). In the present study, the correlations of the composite goal orientation, measures of anxiety, and depression were similar to, albeit weaker than, those of mastery orientation alone. Thus, adoption of a multiple-goal orientation perspective was strongly and negatively related to anxiety and depression and positively related to self-esteem. The rationale of Study 2 was to evaluate the proposition that performance-approach students are significantly more anxious compared with mastery students when faced with a highly demanding task.

Study 2: Goal Orientation and Anticipated Negative Affect

Method

Participants and Procedure

Participants were 116 typical 5th and 6th graders (58 boys and 58 girls). Graduate research assistants directed the students to complete a series of measures assessing motivation and personality-related variables prior to taking a math test (containing 15 math exercises—curriculum based). Students completed the trait measures and, prior to completing the state measures, were shown a set of very challenging math exercises. Students were then asked to circle the adjectives that described how they felt about mathematics that specific moment. Examples of adjectives were “enthusiastic,” “angry,” and so forth, and their scaling ranged from 1 (not at all) to 5 (very much so). A prediction of traditional goal theory (e.g., Dweck & Leggett, 1988) was that exposure to challenging math exercises would energize anxiety, particularly for performance-oriented students (approach and avoidance). Thus, the state measures were designed to assess emotional distress, specifically in mathematics (i.e., the PANAS–C was modified to assess feelings toward mathematics).

Measures

Goal orientations. Goal orientations were assessed as in Study 1. Three groups of students were formed on the basis of their ratings on mastery and performance-approach orientations. After closely examining the distributions of the variables, we decided to use mean splits to create high mastery, performance approach, and performance avoidance student groups (M\textit{M\textsubscript{Mastery}} = 6.34, SD\textsubscript{Mastery} = 0.88; M\textit{M\textsubscript{Performance approach}} = 5.85, SD\textsubscript{Performance approach} = 0.63; and M\textit{M\textsubscript{Performance avoidance}} = 4.79, SD\textsubscript{Performance avoidance} = 1.25). Students who were high on various combinations of goal orientations were removed from further analyses leaving a valid sample of 95 students. Internal consistency estimates were .89 for performance-approach, .88 for mastery, and .67 for performance-avoidance. Intercorrelations between goal orientations were \(r_{M\text{\textit{M\textsubscript{Mastery}}/performance\text{\textsubscript{Approach}}}} = .19, r_{M\text{\textit{M\textsubscript{Mastery}}/performance\text{\textsubscript{Avoidance}}}} = - .20, r_{M\text{\textit{M\textsubscript{Performance\textsubscript{Approach}/performance\textsubscript{Avoidance}}}}} = - .17\).

Negative affect. Negative feelings regarding math were assessed with the state and trait Negative Affect, Anger, and Fearful measures from the PANAS–C. Differences in state anxiety were evaluated between groups after we adjusted for individual differences in the trait variables (i.e., trait variables served as covariates). Alphas ranged from .73 to .82.

Results and Discussion

To test the hypothesis that performance-oriented (approach or avoidance) students are highly anxious prior to a stressful event, an analysis of covariance was implemented with the respective trait negative affect measure being the covariate. Results regarding negative affect indicated that there was no significant main effect of goal orientation grouping, \(F(2, 91) = 0.45, p = .637\), after we controlled for the significant effects of the covariate. Similarly, for the fearful aspect of negative affect, no main effect was observed on goal orientation, \(F(2, 91) = 0.25, p = .781\). Once again, the covariate (trait negative affect) was significant. Finally, for anger, no main effect for goal orientation grouping was observed \((F(2, 91) = 2.34, p = .102\). Examination of the present study’s hypothesis reveals that performance-approach students were no more anxious than mastery students or performance-avoidance students across all negative affectivity measures. We conclude that performance-oriented students do not manifest elevated anxiety prior to a stressful event compared with mastery-oriented students.

Study 3: Goal Orientation and Posttask Affectivity and Anxiety

The purpose of Study 3 was to assess how mastery, performance-approach, and performance-avoidance students would react following a negative event. On the basis of the traditional model (Dykman, 1998), performance-oriented students (approach and avoidance) were expected to exhibit increased negative affect following failure because such an event would be interpreted as an indication of their incapability. On the other hand, mastery students were not expected to show elevations in negative affect and anxiety because they welcome challenging tasks and do not consider low achievement an indication of low ability.

Method

Participants and Procedure

Participants were 130 typical 5th and 6th graders (68 boys and 62 girls) who were instructed to complete a battery of self-report measures, solve a series of math problems, and then complete more self-report measures. The procedure was directed by graduate research assistants in the presence of the class teacher. Following the completion of the assessments of affectivity and goal orientations, students were given a series of 15 challenging math problems for their grade. It was expected that the experience would be negative and, to some students, frustrating. Results indicated that no student solved more than 50% of the problems, so the desired level of difficulty and challenge was achieved. Affective measures were completed prior to and following the math activity.

Measures

Goal orientations. Goal orientation groups were created by use of mean splits (M\textit{M\textsubscript{Mastery}} = 6.26, SD\textsubscript{Mastery} = 0.76; M\textit{M\textsubscript{Performance approach}} = 5.89, SD\textsubscript{Performance approach} = 0.84; and M\textit{M\textsubscript{Performance avoidance}} = 4.85, SD\textsubscript{Performance avoidance} = 1.20). Forty-four students were characterized as mastery, 44 as performance-approach, and 42 as performance-avoidance. As in Study 2, students holding high or low scores on all orientations were eliminated from further analyses. Alpha values were .90 for mastery, .87 for performance-approach, and .63 for performance-avoidance. Intercorrelations between goal orientations were \(r_{M\text{\textit{M\textsubscript{Mastery}/performance\text{\textsubscript{Approach}}}}} = .11, r_{M\text{\textit{M\textsubscript{Mastery}/performance\text{\textsubscript{Avoidance}}}}} = -.32, r_{M\text{\textit{M\textsubscript{Performance\textsubscript{Approach}/performance\text{\textsubscript{Avoidance}}}}} = -.18\).

Anxiety and affect. Trait negative affect, state negative affect, fearfulness, and anger were assessed with PANAS–C, as in Study 2. In addition, trait positive affect, state positive affect, heartiness and activation were also assessed with the PANAS–C. Lonigan et al. (1999) stated that positive affectivity reflects one’s pleasurable engagement with his or her surround-
ings and one’s positive energy and enthusiasm to interact with the environ-
moment. They proposed the existence of two positive affectivity factors,
namely activation and heartiness. Adjectives for activation were “alert,”
“attentive,” “determined,” and “interested,” and for heartiness they were
“active,” “enthusiastic,” “excited,” “inspired,” “proud,” and “strong.” So-
cial alienation, worry–oversensitivity, and physiological concerns were
assessed with the RCMAS, as was done previously (Reynolds & Rich-
mond, 1978). Alphas ranged from .78 to .89.

Results and Discussion

A series of analyses of covariance evaluated between-groups differences (mastery, performance approach, and performance avoidance) across all anxiety and negative affectivity measures following the negative event. The respective trait variables in affect composed the covariates in all analyses. Results indicated that there were no significant differences across all goal orientation groups in both positive and negative posttask affectivity. Significant differences were observed in anxiety, with mastery students feeling significantly more alienated and reporting more physiological concerns compared with performance-avoidance students. For social alienation, $M_{Mastery} = 1.71$, $M_{Performance-approach} = 1.58$, and $M_{Performance-avoidance} = 1.47$, $F(2, 127) = 3.87$, $p = .023$; for physiological concerns, $M_{Mastery} = 1.82$, $M_{Performance-approach} = 1.74$, and $M_{Performance-avoidance} = 1.63$, $F(2, 127) = 4.09$, $p = .019$. No differences were observed across worry and oversensitivity. Thus, contrary to earlier findings, mastery students were more anxious compared with performance-avoidance students. Also, performance-approach students did poorly in challenging mathematics tasks but not significantly more poorly compared with mastery or performance-avoidance students. Another way of expressing this particular finding is that the poor performance of performance-approach students did not affect them any more negatively than it affected mastery-oriented students.

Study 4: Goal Orientation and Persistence

Another hypothesis was that performance-oriented individuals give up and disengage from academic tasks because their self-worth is threatened. The self-worth threat builds up and renders the person incapable of regulating his or her emotions and performance. Thus, effort was expected to deteriorate for performance-oriented students compared with mastery students.

Method

Participants and Procedure

Participants were 93 typical fifth and sixth graders (47 boys and 46 girls) who were given a set of 15 challenging for their grade math exercises that were already solved (but most had been solved incorrectly). Students were asked to look at the solved exercises and put a checkmark (√) if the exercise was solved correctly or an “X” if it was solved incorrectly. In addition, students were asked to find and mark the part of the exercise where the mistake was located and describe the nature of the mistake in writing. Correct and incorrect exercises were alternated in the protocol in random order. Students were instructed to work on the exercises a minimum of 6 min. Following the minimum time, students were told they were free to go and play in the school yard. However, if they wished to continue working on their math problems, they could do so for 9 more minutes (the maximum time of 15 min). Fifteen minutes was set as the upper time limit because prior pilot work had demonstrated that after the maximum time student performance did not improve (because of attention span problems).

Time was also a consideration given that other activities were taking place on the school premises. Every student was asked to first raise his or her hand upon completion. A trained graduate research assistant marked on the student’s booklet the time each student spent engaging in the math activity. When the 15 min elapsed, the research assistant ended the activity for the remaining students (1–2) who were still working on the exercises.

Measures

Goal orientations. Goal orientation assignment was accomplished with mean splits, as was done previously ($M_{Mastery} = 6.16$, $SD_{Mastery} = 0.66$; $M_{Performance-approach} = 5.78$, $SD_{Performance-approach} = 1.02$; and $M_{Performance-avoidance} = 4.16$, $SD_{Performance-avoidance} = 1.36$). Twenty students were characterized as mastery, 42 as performance-approach, and 31 as performance-avoidance. As in the previous studies, students with high or low scores on all orientations were eliminated from further analyses. Cronbach alphas were .86 for performance-approach, .87 for mastery, and .74 for performance avoidance. Intercorrelations between goal orientations were $r_{Mastery/Performance-approach} = .09$, $r_{Mastery/Performance-avoidance} = -.62$, and $r_{Performance-approach/avoidance} = -.01$.

Persistence. Persistence was the time students spent engaged with the math exercises.

Effort. We created a composite measure of effort using self-reports of both students and their teacher. The student item was “How hard do you study for mathematics every day?” and the teacher item was “Do you believe the student tries hard to learn mathematics?” The scaling ranged from 1 (not at all) to 7 (very much so) for the student item and was yes–no for the teacher item. A composite effort variable included the sum of both the teacher and student items.

Commitment. Similar to the assessment of effort, a composite variable reflecting commitment in mathematics was a function of both student and teacher self-perceptions (3 items). The items were adapted from scales extensively used in the applied psychology literature (e.g., Hollenbeck, Williams, & Klein, 1989) and were “How determined are you to achieve excellence in math?” “How hard do you intend to study to achieve excellent grades in math?” and “How much do you care about achieving excellence in math?” Internal consistency of goal commitment was .83. The teacher-report item was “Do you believe that the student is determined to achieve high levels of performance in math?” The scaling ranged from 1 (not at all) to 7 (very much so).

Results and Discussion

The prediction of Study 4 was that performance-oriented (approach and/or avoidance) students would give up in the face of challenging math exercises. Results of an analysis of variance indicated that there were no significant group differences between time spent engaged with the exercises and self-reported effort ($Time_{Mastery} = 8.40$, $Time_{Performance-approach} = 8.74$, $Time_{Performance-avoidance} = 7.77$), $F(2, 90) = 1.24$, $p = .293$, and ($Effort_{Mastery} = 5.70$, $Effort_{Performance-approach} = 6.43$, $Effort_{Performance-avoidance} = 5.81$), $F(2, 90) = 2.73$, $p = .07$. Significant differences emerged in goal commitment, with the performance-approach group being significantly more committed compared with both the mastery and performance-avoidance students ($Commitment_{Mastery} = 6.82$, $Commitment_{Performance-approach} = 7.51$, $Commitment_{Performance-avoidance} = 6.86$), $F(2, 90) = 5.23$, $p = .007$. Both groups worked, on average, 2–3 min over the time they were required to engage with the math exercises. As Harackiewicz et al. (1998) and Dykman (1998) suggested, the intrinsic value associated with the adoption of competence-based goals may account for enhanced effort and persistence (Dykman even proposed the presence of superhuman acts as a compensatory strategy.
to resolve self-concept uncertainty). Recent empirical findings corroborate the idea that under specific circumstances (e.g., when perceived competence is not devalued), performance-approach goals may be adaptive and, at times, even more adaptive compared with mastery goals (see Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997; Harackiewicz et al., 2002; Midgley et al., 2001).

**Study 5: Goal Orientation and Self-Regulation**

The purpose of Study 5 was to examine the functional role of goal orientations in regulating student behavior and affect and their association with anxiety and depression. On the basis of revised goal theory it was predicted that performance-approach and mastery goals would relate positively to achievement-related processes and achievement and negatively to psychopathology. In addition, it was hypothesized that seeking both goals (mastery and performance-approach) would be adaptive to motivation and achievement and even more adaptive compared with the adoption of one set of goals.

**Method**

**Participants and Procedure**

Participants were 377 typical 5th and 6th graders (190 boys and 187 girls) who were given a set of 15 challenging math problems. The procedures for the administration of the measures and the math activity were identical to those of Study 3.

**Measures**

Goal orientations were assessed as was done previously. Internal consistency estimates were .89 for performance-approach, .72 for performance-avoidance, and .87 for mastery. Students’ self-reported effort, time engaged on the exercises, and commitment were assessed as in Study 4. Following the math exercises, indices of negative affectivity were assessed with the PANAS-C, indices of anxiety with the RCMAS, indices of depression with the CDI, and indices of self-esteem with Rosenberg’s (1965) scale, as was done in Studies 1–4.

**Results and Discussion**

Four latent variable models were tested, one for each goal orientation type. All models included mediating effects and postulated that mathematics achievement was a function of two antecedent processes, immediate and distal. Immediate antecedents were the behavioral manifestations of motivation such as the time students spend on mathematics and their self-reported effort and commitment, and distal antecedents were considered the goal orientations, including the additive multiple-goal orientation term. Consequences of achievement were the assessments of anxiety, negative affect, self-esteem, and depression, which were expected to vary as a function of math achievement. All models were run with EQS 5.7b (Bentler, 1998).

Mastery goals were expected to be adaptive to achievement (Figure 1, top panel). Model fit was excellent when mastery goals were added in the model as a causal indicator of student motivation, achievement, and psychopathology, $\chi^2(6, N = 374) = 10.173, p = .117$, comparative fit index (CFI) = .995, McDonald’s fit index (MFI) = .994, incremental fit index (IFI) = .995. From 15 structural paths, 11 reached statistical significance at $p < .05$. Significant amounts of the variability of mathematics achievement (8.5%) were accounted for by the antecedent variables. Mastery goals exerted positive effects (direct and indirect) on achievement and self-esteem and negative effects on anxiety, negative affect, and depression.

According to Dykman (1998), the negative effects of exposing performance-oriented students to challenging math exercises would be manifested with elevated depression, anxiety, and negative affectivity and with loss in self-esteem. The simultaneous evaluation of all hypothesized relationships produced a nonsignificant chi-square estimate and almost perfect model fit, $\chi^2(6, N = 374) = 6.774, p = .34$, CFI = .999, MFI = .999, IFI = .999. From the 15 causal paths, 7 reached statistical significance at $p < .05$. Significant amounts of the variability of mathematics achievement (8%) were accounted for by the simultaneous contribution of motivation and performance-approach goals. The direct paths between performance-approach and motivation (i.e., effort and commitment) were strong and positive, with the exception of engagement. However, the direct effect on achievement was negative, contrary to recent suggestions, positing an adaptive role of performance-approach goals with achievement (Harackiewicz et al., 2002). Nevertheless, the effects of performance-approach goals on negative affect, anxiety, and depression were negligible, supporting the thesis that those goals do not contribute to depression proneness.

One reasonable hypothesis is that the early negative effects of performance goals may have been due to the interplay between approach and avoidance tendencies. From Model 2, it was apparent that performance-approach goals did not account for much of the variability in negative affect. Thus, Model 3 tested the hypothesis that performance-avoidance may be accountable for variability in anxiety, negative affect, and depression (see Figure 1, bottom panel, values in parentheses). Once again model fit was exceptional, $\chi^2(6, N = 373) = 5.867, p = .44$, CFI = 1.00, MFI = 1.00, IFI = 1.00. Nine out of the 16 structural paths exceeded levels of significance, as hypothesized, performance-avoidance goals were positively linked to negative affect, anxiety, and depression. Performance-avoidance goals were also linked negatively with achievement and self-esteem. Thus, these findings support the thesis that the early negative effects of performance goals may have been confounded by the presence of the goal to avoid failure.

The full model for a combined mastery and performance-approach orientation is shown in Figure 2. Results indicated excellent model fit, $\chi^2(6, N = 374) = 9.076, p = .17$, CFI = .996, MFI = .996, IFI = .996. The results from this model resembled previous modeling, with the weights associated with mathematics achievement and psychopathology being on the negative side as predicted. We suggest that the additive effects of mastery and performance-approach goals are adaptive on motivation and achievement, albeit weaker compared with the adoption of mastery goals alone.

**General Discussion**

The present article sought to examine the cognitive and emotional effects of goal orientations in predicting both academic achievement and depression in the elementary school setting. The main proposition tested was that performance goals are associated with a proclivity to depression.

The first hypothesis examined whether an exclusive focus on winning and maintaining a high social status may interfere with task
involvement, learning, interest, processing of information, and eventually achievement levels (Tauer & Harackiewicz, 1999). Results indicated that performance-approach goals were not maladaptive. Seeking to outperform others and maintain high social status was adaptive to both motivation and achievement and unrelated to negative affect, contrary to Dykman’s (1998) earlier propositions.

The prediction that performance-approach students would be highly anxious in the presence of a stressful event to protect their self-worth, competence, and likability (and avoid negative evaluations) was not supported. Given that performance-approach goals represent a more global evaluation of capabilities (i.e., social-comparative), it was expected that the prospect of negative evaluations would severely affect one’s thinking pattern, leading to a maladaptive cognitive path. The first defense mechanism employed is anxiety; if anxiety, however, is elevated substantially, it disturbs one’s cognitive processing, resembling a catastrophe-like model. Anxiety inhibits adaptive thinking and the deep processing of information. The concurrent attack to self-esteem leads to the

Figure 1. Structural model predicting psychopathological tendencies from mastery goals (top panel), performance-approach goals (bottom panel), and performance-avoidance goals (bottom panel, values in parentheses). Values in the model are standardized structural coefficients.
use of maladaptive strategies and the realization that a task is insurmountable. This realization could lead to effort withdrawal and poor achievement outcomes. The present studies’ findings did not support the proposition that performance-approach students are highly anxious. This lack of finding significant differences between goal orientation groups is most likely attributed to the dichotomization of performance goals into approach and avoidance. By removing the avoidance component from performance goals, one can hypothesize that this type of goal (i.e., to approach a positive end state) can be adaptive to achievement. Why would purposeful goal-directed activity not be linked to positive achievement outcomes? The present findings corroborate with the thesis of revised goal theory (e.g., Harackiewicz et al., 2002; Kaplan & Middleton, 2002; Midgley et al., 2001) that a focus on competence (academic and social) is adaptive for achievement purposes. The valence and intrinsic value associated with pursuit of high academic achievement may be significantly more powerful in explaining student’s motivated behavior (engagement and persistence), compared with other goal-oriented combinations (e.g., Grant & Dweck, 2003).

Dykman (1998) proposed that following a challenging task, performance-oriented individuals would show elevated anxiety and may also show signs of depression when performance is low. In the present studies, achievement was low for performance-approach students, but it was not associated with negative emotional states compared with mastery students. Although the event was aversive (i.e., students failed the math exercises), no differences were observed in negative affectivity across goal groups. It is likely that performance avoidance orientation acts like the personality disposition “in motion” (Dykman, 1998) that is associated with generally more negative life events and the proclivity to produce such events. Mastery, performance-approach, and a combination of mastery and performance-approach orientations were negative predictors of depression and anxiety in accord with previous studies using the mastery-performance dichotomy (e.g., Pintrich, 2000).

Given the early views of Dweck (1986) and Dykman (1998) it was predicted that performance-oriented students would withdraw effort. This finding was not supported for either performance-approach or performance-avoidance students. In particular, performance-approach students may not be willing to give up in the face of difficulty because the negative outcomes associated with low achievement may be greater than the frustration they would experience from not doing well (threat to self-worth, likability, etc.). The lack in giving up effort is particularly striking given the nature of the present studies’ task. Solving math problems requires deep processing, concentration, the use of optimal strategies, and persistence, all attributes of mastery-oriented students. Attending to extrinsic rewards and/or performance outcomes has previously been found to relate negatively to effort, particularly for such challenging tasks (Elliott & Dweck, 1988). However, based on the recent views of Harackiewicz et al. (2002) the valence of the motive to outperform others may result in a strong resistance to withdraw effort. In support of this view, several studies report strong associations between performance-approach goals and effort (Elliot & McGregor, 1999; Elliot et al., 1999).

In the original model, Dweck and Leggett (1988) suggested that a performance orientation would be particularly salient for individuals with low self-esteem and perceived competence. Harackiewicz et al. (1998) argued that performance goals do not necessarily have to impair intrinsic interest. This latter may be impaired if the individuals do not believe that they can accomplish a task. However, if they are confident they can accomplish the task and are not threatened by the task’s demands, then achievement can be high. Maintaining high levels of intrinsic interest and intrinsic value may be the difference between giving up and persisting. Whether intrinsic value lies in outperforming others, maintaining high social status, or being liked, students may achieve positive...
academic outcomes. Thus, the value and importance associated with the pursuit of a goal may be the critical element in attaining positive achievement outcomes and in resisting depression.

The present studies suggest that individuals are saddened and depressed when they are unable to achieve academic goals because goal failure has implications for social functioning. Performance-approach can be considered the latent construct of performance goals, expanded to include social elements (i.e., “likability”). Thus, one’s proclivity to depression is suggested to be a function of his or her inability to achieve at competitive levels; adding the person’s negative cognitions about how that performance will affect his or her social status may account for depression proneness. It is likely that the collateral attacks to both the academic and social selves may lead to despair, maladaptive cognitions, and depression. The positive effects of social goals on achievement and adjustment have been well documented in the literature (Spiera & Wentzel, 2003; Urden, 1997; Urden & Maehr, 1995; Wentzel, 1993). However, how social threats that are the outcome of academic goal failure may relate to depression is not well known. Thus, efforts to reduce depression proneness may well focus on changing one’s way of thinking about his or her capabilities, which collaterally affects one’s social status.

Given that depression is attributed to motive dispositions and goal setting, depression prevention should start with the early school experiences. Teachers may structure their environment to promote interest in academic tasks and value mastery and improvement rather than competence. Although competence was associated with adaptive achievement outcomes, it was not a significant predictor of positive affect. Thus, a first priority may be to provide students with mastery experiences to affirm one’s competence-based beliefs and enhance efficacy and self-esteem. The latter may be the “barometer” in controlling whether one would resist or give in to a stressor (Maehr & Anderman, 1993). Structuring the classroom environment in a way that encourages the pursuit of multiple goals may also prove to be adaptive. Offentimes, the combination of multiple goals proved to be more adaptive than the pursuit of mastery goals alone (Barron & Harackiewicz, 2001; Pintrich, 2000). Other times, seeking to master a task was associated with superior achievement outcomes compared with the combination of multiple goals (e.g., Mece & Holt, 1993; Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000).

The present studies have both advantages and limitations. An advantage is the applied nature of the tasks pursued, in which students were evaluated in their natural settings by their teachers. Also, the revised diathesis–stress model was tested with a new population, elementary schoolchildren, thus examining antecedents of childhood depression with implications for prevention. A limitation of the studies was an inability to examine gender differences in parent and child reports of children’s symptoms of depression and anxiety. Psychological Assessment, 12, 174–185.


Elliot, E. S., & Dweck, C. S. (1988). Goals: An approach to motivation pursued? Also, it would be important to evaluate Dykman’s (1998) assertion that performance approach may trigger the onset of negative life events. Could a performance-approach orientation have such catastrophic propensities?

References


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