

Goal Orientation and Feedback Congruence: Effects on Discretionary Effort and Achievement

KIMBERLY K. MERRIMAN¹
University of Massachusetts Lowell

ROY B. CLARIANA
Pennsylvania State University

RAYMOND J. BERNARDI
Wyoming Area School District

This study examines the differential effects of outcome feedback for achievement goal orientations' relationship with effort and achievement. In support of our predictions, learning goal orientation had a positive relationship with task achievement in the absence of outcome feedback and a negative relationship in its presence, while performance goal orientation maintained a positive relationship with achievement regardless of whether outcome feedback was provided. We attribute this to a decrease in task interest when initial task purpose, as determined by personal goal orientation, is incongruent with the subsequent task cues provided by outcome feedback. Predictions regarding task effort and combined goal orientation effects were not supported. Implications for theory and practice are discussed.

Achievement goal orientation (GO) represents the underlying motivational reason an individual pursues an achievement task. The concept has matured in education research (Dweck, 1986) and has also more recently been recognized by organizational scholars as an important factor in performance management (e.g., Ordoñez, Schweitzer, Galinsky, & Bazerman, 2009). A relatively recent direction of GO research points to differences in feedback-seeking behaviors, particularly in *type* of feedback sought, based on personal GO (Janssen & Prins, 2007; VandeWalle, 2003). This begs the question: If clear feedback preferences exist for individual GOs, what are the implications when a nonpreferred type of feedback is imposed? The most common type of feedback provided in practice is outcome feedback, a simple reporting of the results achieved (Butler & Winne, 1995; e.g., number of correct answers or number of widgets produced). Given the ubiquitous nature of outcome feedback, a clearer understanding of its potentially distinct relationship with different GOs is essential to effective performance management.

¹Correspondence concerning this article should be addressed to Kimberly K. Merriman, Manning School of Business, University of Massachusetts Lowell, One University Avenue, Lowell, MA 01854, USA. E-mail: kkm@kkmerriman.com

Achievement goal theorists contend that in the absence of situational cues to signal which goals are favored, dispositional goal preferences are likely to direct achievement behavior (Payne, Youngcourt, & Beaubien, 2007; Vandewalle, 2003). We begin our investigation with this direct relationship, in the absence of feedback, and then conceptually and empirically consider what happens when outcome feedback is provided. We propose that while personal GO determines the superordinate goal one implicitly holds, the type of performance feedback provided serves to clarify or make salient the inherent task-level goal—two distinct levels of goals that potentially interact (Pintrich, 2000a, p. 97).

Our study offers three primary contributions. First and foremost, we provide insight into the differential effects of outcome feedback for individual GOs. Second, we investigate the relationship of combined, in addition to single, dimensions of GO, whereas existing research has largely examined GOs in individual contrast rather than in combination. Third, we conduct our investigation using an actual achievement situation (standardized state testing and practice lessons) in which degree of involvement is relatively discretionary. By discretionary, we mean task participation is not enforced through rewards (no grade) or punishment (no overt penalty for poor performance). Thus, the findings may have generalizable implications for the less enforceable areas of performance that educators or managers want to encourage (e.g., self-managed learning and organizational citizenship behaviors).

Achievement GO Overview

GO is a motivational construct that originated in the educational psychology literature and has since been investigated more broadly by both educational and organizational researchers. GO was specifically developed to explain achievement motivation and behavior and represents a cognitive schema for how individuals interpret and respond to achievement situations (Farr, Hoffman, & Ringenbach, 1993; see Pintrich, 2000a, for a detailed overview). In short, there are two broad classes of achievement goals: performance and learning (also referred to as mastery). Individuals with a performance goal orientation (PGO) seek to validate or prove their ability to others through their performance in relation to external standards. In contrast, individuals with a learning goal orientation (LGO) focus on developing rather than proving their ability and evaluate their success through internal standards.

Although early theorizing and research considered PGO and LGO to represent opposing ends of a continuum, they are now empirically supported as independent dimensions (e.g., Steele-Johnson, Heintz, & Miller, 2008).

PGO has been further deconstructed into approach and avoidance states by some researchers, reflecting individual focus on gaining favorable judgments about one's ability versus avoiding unfavorable judgments (e.g., Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Steele-Johnson et al., 2008; VandeWalle, 1997). Pintrich (2000a) proposes a comparable deconstruction for LGO, although empirical support of this notion is not yet established. The present paper focuses on the approach dimensions of LGO and PGO, subsequently designated without the approach prefix throughout the remainder of the paper for both our conceptual discussion and when discussing results of other studies.

GO is considered a relatively stable trait, but it can also be influenced by contextual factors (Button, Mathieu, & Zajac, 1996). Both dispositional and state findings generally indicate that LGO has more beneficial effects than PGO in terms of self-regulation and adaptive patterns of achievement, particularly in learning contexts. For instance, a 157-study meta-analysis by Payne et al. (2007) found LGO orientation of adults in educational and occupational settings to be positively associated with challenging self-set goals, greater use of learning strategies, learning, and academic performance, while PGO had no relationship with these outcomes with the exception of learning strategies, which reflected a positive but smaller correlation than found with LGO. Studies of adolescents in learning environments are generally similar in findings, although not as conclusive in terms of actual performance differences.

Evidence suggests that individuals hold different levels of LGO and PGO at the same time (Meece & Holt, 1993; Pintrich, 2000b). However, research has largely examined GOs in individual contrast rather than in combination. The limited exploration of combined LGO–PGO effects has resulted in mixed results as to whether PGO enhances or detracts from LGO's positive effects on achievement processes and achievement (see Pintrich, 2000b, for an overview). In an attempt to explain these mixed results, Pintrich (2000b) examined differences in adaptive outcomes and achievement (grades) over time for eighth- and ninth-grade students of varied levels of LGO and PGO, suggesting there may be distinct pathways to equally successful performance. His results show that PGO enhanced the positive effect of LGO on perceptions of task value, but otherwise did not enhance or reduce the positive effects of high LGO or the negative effects of low LGO. Similarly, a study of Taiwanese sixth graders found that PGO did not enhance or reduce LGO's positive effect on adaptiveness and achievement (e.g., grades; Shih, 2005). However, unlike the former study, Shih (2005) found a positive relationship between PGO and achievement in the context of low LGO. This finding may be influenced by cross-cultural differences or the greater clarification of approach versus avoidance PGO in Shih's study.

Hypotheses and Present Study

The achievement tasks in the present study consist of a standardized state test and related self-directed practice lessons (defined in more detail in the “Methods” section), which have two inherent aspects that are relevant to our predictions. Anecdotal evidence shows students view these as discretionary tasks and some schools have creatively attached rewards or punishments to standardized state testing as a means to encourage engagement (Hahn, 2009; Lee, 2003). Students in the study sample were asked to take the tasks seriously, but the school attached no direct consequences to compel engaged participation. Thus, effort and achievement in these tasks rely heavily on students’ intrinsic task interest. Also relevant to our predictions, the tasks inherently speak to both learning and performance goals. State assessment exams provide a self-assessment opportunity to further develop individual learning and also provide an opportunity for validation of ability through standardized test scores. The self-directed practice lessons for the state exam hold similar learning and performance qualities.

Main Effects of GO

We will now consider the task qualities described above—inherent learning and performance goals that rely on intrinsic interest—in terms of GO. LGO is conceptually (Butler, 1987) and empirically (see Rawsthorne & Elliot, 1999, 30-study meta-analysis) associated with greater levels of intrinsic motivation than PGO and, when both orientations were considered in combination, LGO’s beneficial effects on intrinsic motivation remained constant regardless of the level of associated PGO (Shih, 2005). However, research suggests that intrinsic motivation can also be enhanced for individuals with high levels of achievement orientation (a broad measure that encompasses the PGO construct) when task goals are framed in terms of performance versus learning (Elliot & Harackiewicz, 1994; Harackiewicz & Elliot, 1993). Thus, a task that addresses learning *and* validation of ability should intrinsically appeal to those with a high versus low level of either LGO or PGO or both, and as a consequence promote higher effort and achievement (manifestations of intrinsic motivation). Before making formal hypotheses to this effect, we will next consider the moderating role of performance feedback.

Moderating Role of Performance Feedback

Earley, Northcraft, Lee, and Lituchy (1990) distinguished two types of performance feedback: outcome feedback and process feedback. Outcome

feedback provides information on specific performance outcomes (e.g., number of widgets completed) and process feedback focuses on the manner in which an individual implements a work strategy (Earley et al., 1990, p. 88). Conceptually, PGO is most aligned with outcome feedback since individuals high in this orientation view ability as unchanging and seek a benchmark against which to validate rather than develop their ability (VandeWalle, 2003). Further, outcome feedback may be misaligned with LGO's preference for adaptive learning behaviors since, although outcome feedback helps identify differences in desired versus actual results, it does not provide information on how performance strategies might be adjusted to achieve desired results. In keeping with this notion, seeking of self-validation information was negatively related to dispositional LGO in a field study of medical residents, although counter to prediction was unrelated to PGO (Janssen & Prins, 2007). Two experimental studies using student samples found state PGO preferences for outcome over process information, and state LGO preferences for process over outcome information (Butler, 1992, 1993).

However, GO preference for a type of feedback does not alone dictate differential feedback effects for task effort and achievement. The link to task engagement derives from the premise that task interest depends on the degree to which the process and outcomes of task engagement are congruent with the initial perceived task goal (Sansone, Sachau, & Weir, 1989). Sansone et al. (1989) supported this view in experiments involving undergraduate students and a computer game with two inherent goals: performance (scoring points) and "fantasy" (creatively exploring the game's objects). Intrinsic motivation decreased when performance-focused instructions followed fantasy goals and remained the same or increased when the same instructions followed implicit or explicit performance goals, respectively. A post hoc finding by Butler (1992), interpreted by Butler as supportive of Sansone and colleagues' findings, showed students who held a PGO (inferred based on time spent reviewing normative performance information related to the task) subsequently expressed lower interest than other students in the same task under a learning-framed condition, but no difference under a performance-framed condition.

More specific to the task conditions under study, an experimental study of undergraduate students found that state LGO, manipulated by initial task instructions, resulted in higher intrinsic motivation when matched with task conditions that focused individuals on developing and elaborating task strategies versus using a straightforward rehearsal strategy for effective performance (Steele-Johnson, Beauregard, Hoover, & Schmidt, 2000). However, they did not find support for a counter PGO prediction. Finally, in an experimental study of front-line supervisors, outcome feedback in contrast with process feedback resulted in lower performance appraisal satisfaction,

lower expectations of performance improvement, and lower levels of actual performance improvement (completion time; Lam & Schaubroeck, 1999). Although the task type was not a focus of their study, it is relevant to the present study that it was a learning task—participants were instructed in advance that the task involved “learning skills” employed via a training session and simulation exercise.

Taken as a whole, there seems a clear pattern that a high initial LGO and subsequent outcome feedback, or equivalent task cues, represent a mismatch that results in a decrease of intrinsic motivation and task performance. A high initial PGO followed by outcome feedback, or equivalent task cues, was generally not found to affect task outcomes, particularly when performance goals were not initially explicit. Thus PGO and outcome feedback may indeed be congruent, but the consequence of this congruence may simply be maintained task interest rather than enhanced task interest. The preceding studies generated initial task goal salience via manipulation, intentionally or unintentionally focusing on state GO. We suggest a similar pattern will hold with dispositional GO determining initial task goal salience.

Feedback Application in the Present Study

A randomized half of the student sample in the present study was provided outcome feedback in the form of the number of lessons completed and remaining on their self-directed practice lessons and their percentage score for each lesson (detailed in the “Methods” section). In keeping with the research and reasoning outlined to this point, we suggest the outcome feedback will interact with LGO to reverse LGO’s expected beneficial effects on discretionary effort and achievement. Outcome feedback is congruent with PGO and should not have a deleterious impact on PGO’s expected beneficial effects. Based on our interpretation of the empirical findings detailed above, neither do we expect outcome feedback to enhance PGO’s expected relationship with discretionary effort and performance. Finally, LGO and PGO appear to present distinct pathways to similar outcomes, which implies an additive relationship and allows for our predicted independent effects, but have had limited additional predictive value when considered in interaction (Pintrich, 2000b; Shih, 2005). It stands to reason, though, that the beneficial effects of PGO may offset, to some degree, the deleterious effects of LGO in the presence of outcome feedback. In other words, effort and achievement for high LGO students may be less eroded by outcome feedback when the student is also high in PGO, relative to students that are low in PGO.

Hypothesis 1. PGO will demonstrate beneficial effects on (a) task effort and (b) task achievement.

Hypothesis 2. Outcome feedback will moderate the relationship between LGO and (a) task effort and between LGO and (b) task achievement such that LGO will demonstrate beneficial effects in the absence of outcome feedback and deleterious effects in the presence of outcome feedback.

Hypothesis 3. The interaction of LGO and outcome feedback will be further moderated by PGO such that predicted deleterious effects on (a) task effort and (b) task achievement will be less when PGO is high relative to low.

Method

Participants

The participants in this investigation consisted of all eighth-grade students (total $n = 217$) in a school district in Northeastern Pennsylvania. The students attended classes in a facility that houses 7th through 12th-grade students (facility $n = 1,315$). In this facility, 98% of students are White and 24% are on free or reduced lunch. For these eighth graders, a total of 51 students were excluded from the analysis because 17 participants did not participate in the practice lessons, 27 participants had an incomplete parent permission slip or self-report survey, and 7 did not have 2006 Pennsylvania System of School Assessment (PSSA) test data. Thus the final sample used in data analysis consisted of $n = 166$ students, of which 85 were females and 81 were males, and by treatment there were 81 in the feedback condition and 85 in the no feedback control.

Procedure

In late fall, district curriculum coordinators examined the statewide standards and examination anchors in mathematics and reading/language arts and also reviewed students' performance from past examinations, in-class activities, and online activities in order to create individualized, self-directed online lesson plans (OLPs) for each student. The OLPs were prepared in December and the students began to complete their OLPs when school resumed in January (see Figure 1). The students were provided scheduled computer lab time to work on their OLPs during school hours, with rotating subject area teachers present for assistance and were encouraged to also work on their OLPs during study hall periods and outside of school hours (via Internet).

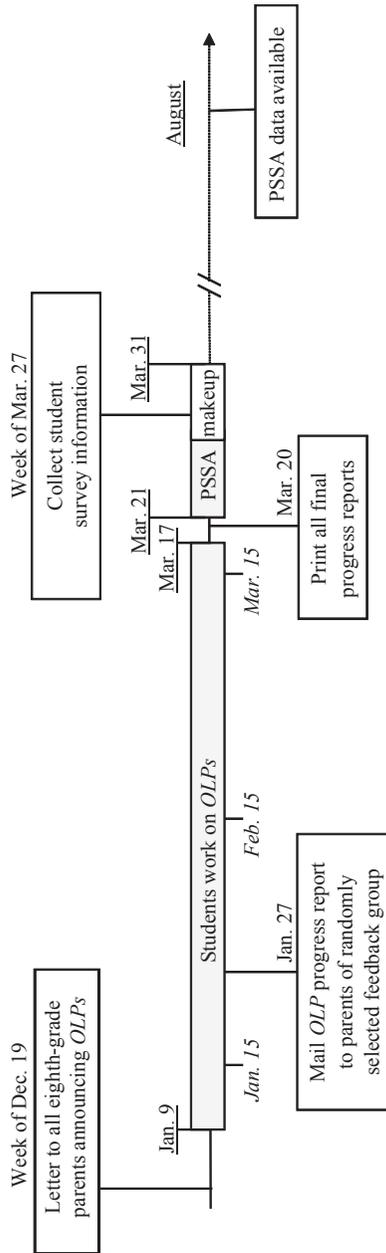


Figure 1. Timeline of the investigation with milestones. OLPs = online lesson plans; PSSA = Pennsylvania System of School Assessment.

During the third week of the investigation, a progress report was generated for all students to show the amount of work each student had completed on their OLPs so far. This list of students was sorted by number of lessons completed to date, and then going down the list two at a time, students were randomly assigned to either the feedback treatment or the no feedback control group. The progress report (feedback) was only sent to the parents of students who were randomly assigned to the feedback treatment. Students continued to work on their OLPs until mid-March (see Figure 1), when they took the statewide examinations. Student GO was assessed via a self-report survey conducted the week following the examinations.

Measures

Goal Orientation. Student GO (*approach* dimensions of LGO and PGO) was assessed using a 10-item measure (comprised of two 5-item subscales) developed by Niemivirta (1998). More details of the subscales are available from Salovaara (2005). Survey items were arranged so that LGO and PGO items were alternated and were measured on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). We conducted a principal components factor analysis with varimax rotation to confirm the consistency of item loadings across the LGO and PGO subscales (see Table 1). The analysis obtained two factors with item loadings as expected. Cronbach's alpha scale reliabilities were $\alpha = .84$ for LGO and $\alpha = .79$ for PGO. In this investigation, students were categorized as high or low mastery (median = 19) and as high or low performance orientation (median = 19) by median split. We also considered LGO and PGO as continuous measures (discussed in the "Results" section), but did not use this approach for our primary method of analysis since it is not well-suited to identifying combined goal profiles and their effects (Pastor, Barron, Miller, & Davis, 2007).

Effort. The measure of effort consisted of the total time on task on OLPs in minutes. In this case, time on task was considered to be a better measure of effort than the number of OLPs completed because students work at different rates. The OLP data were collected on March 20 (see Figure 1) using the *CompassLearning* (CompassLearning, Inc., Austin, Texas) online report generator that accesses the students' OLPs data saved on an Internet file server. The report included all work completed by each student on the mathematics and reading OLPs from January through March.

Achievement. The measure of student achievement consisted of the combined scaled score for reading (language arts) and mathematics on the statewide 2006 PSSA examination. The examinations were derived from state

Table 1

Rotated Component Matrix of Achievement Goal Orientation Survey Data

		Component	
		1	2
Item 15	I feel satisfied when I learn something new.	.801	.184
Item 17	Acquiring knowledge is an important goal.	.795	.260
Item 13	I like to learn new things.	.779	.223
Item 11	I think the most important thing at school is to learn and understand what is being taught.	.705	.235
Item 19	I study on my own to learn and understand new ideas.	.665	.197
Item 12	I feel really good when I do better than others in school.	.066	.901
Item 16	I feel successful when I do better than the other students.	.178	.871
Item 18	I feel best when I can show to the others that I have mastered the content.	.442	.663
Item 10	It is important to me that teachers and other students think I am good at my school work.	.305	.489
Item 14	It is important to me that I do not look stupid in class.	.320	.485

Note. Odd-numbered items refer to learning goal orientation, while even-numbered items refer to performance goal orientation.

standards and assessment anchors and previously were psychometrically validated. The reported Cronbach's alpha reliability of the tests are high (reading $\alpha = .93$ and mathematics $\alpha = .94$; Pennsylvania Department of Education, 2003). The examinations were administered to all eighth-grade students (and other grades) in the state during the same time window toward the end of March. The state examination board converts students' raw scores into scaled scores.

Control Variable. To control for potential differences in how males and females respond to feedback (Katz, Assor, Kanat-Maymon, &

Bereby-Meyer, 2006), we considered gender (1 = male, 2 = female) as a covariate or control in the analyses.

Results

Preliminary Analyses and Considerations

Table 2 contains descriptive statistics and correlations of study variables. The intercorrelation between effort and achievement, the study's two dependent variables, was positive and significant ($r = .22$, $p < .01$). This was expected since effort in practice lessons (OLPs) may improve ability to achieve and since level of student engagement is reflected in both outcomes. LGO and PGO also had significant intercorrelation ($r = .58$, $p < .001$). This is a relatively high level of intercorrelation as compared to other studies, although not a singular finding (e.g., $r = .40$, Murayama & Elliot, 2009; $r = .52$, Shih, 2005). The wording of our scale items, with emphasis on affect and domain specificity, may have contributed to the correlation between GO dimensions, particularly since learning and performance are both valued within the specific domain. However, as previously noted, factor analysis distinguished both GO dimensions as expected. In terms of implications for our analyses, the high correlation between GO dimensions potentially leads to confounded effects in which identifying each variable's distinct influence would be difficult. However, this is not a primary concern since we model LGO effects as conditioned on outcome feedback, thus we do not expect a significant main effect for LGO.

Table 2

Descriptive Statistics and Correlations for Study Variables

	<i>M</i>	<i>SD</i>	1	2	3	4
1. LGO	18.61	3.96				
2. PGO	18.52	3.72	.58**			
3. Effort	208.74	72.11	.11	.07		
4. Achievement	3,082.11	398.03	.16**	.23*	.22**	
5. Gender (1 = male, 2 = female)	1.51	.50	-.04	-.13	.08	-.09

Note. $n = 166$. Learning goal orientation (LGO) and performance goal orientation (PGO) are subsequently categorized as high/low by median split (19) for analyses. * $p < .05$. ** $p < .01$.

We conducted full factorial, three-way analyses of variance (ANOVAs) (type III sums of squares) to test the dependence of effort and achievement on PGO, LGO, and outcome feedback, since it allowed for identification of combined goal profiles and their effects (Pastor et al., 2007). Preliminary and post hoc testing identified generally similar findings with regression (using continuous GO measures) and multivariate analysis of variance approaches. We will discuss differences found in the regression approach, using continuous GO measures, after reporting the ANOVA findings. LGO and PGO factors were tested with two levels (high, low). Outcome feedback was also represented by two levels, indicating its presence or absence. Homogeneity of variance across cells was confirmed for each analysis by Levene's test for equality. Cell means and standard deviations are shown in Table 3. We also report estimated marginal means based on our unbalanced, multiple-effect design. Results for the ANOVAs are summarized in Table 4. Zero-order correlations for gender in relation to the study variables and preliminary investigation of gender as a covariate in the ANOVA models both indicated no significance. Thus gender was not included as a control or covariate in subsequent analyses.

Hypotheses Testing

ANOVA results for task effort failed to reveal a significant main effect for PGO, $F(1, 158) = .26, p > .05, \eta^2 = .00$. Interaction effects were also statistically nonsignificant for LGO \times Outcome Feedback, $F(1, 158) = .29, p > .05, \eta^2 = .00$, and PGO \times LGO \times Outcome Feedback, $F(1, 158) = .01, p > .05, \eta^2 = .00$. Thus, Hypotheses 1a, 2a, and 3a were not supported.

ANOVA results for achievement yielded a significant main effect for PGO, $F(1, 158) = 3.79, p \leq .05, \eta^2 = .02$. Students with high PGO (estimated marginal $M = 3,121.09$) demonstrated higher achievement on standardized state testing relative to students with low PGO (estimated marginal $M = 2,998.16$). Thus, Hypothesis 1b is supported.

ANOVA results for achievement also revealed a significant interaction effect for LGO \times Outcome Feedback, $F(1, 158) = 4.58, p < .05, \eta^2 = .03$. As depicted in Figure 2, achievement in the absence of outcome feedback was greater for high LGO students (estimated marginal $M = 3,172.90$) versus low LGO students (estimated marginal $M = 2,931.90$), due to apparent counter-effects of feedback on achievement for high LGO students (estimated marginal $M = 3,081.57$) and low LGO students (estimated marginal $M = 3,052.12$). Thus, Hypothesis 2b is supported. As a point of comparison in Figure 2, and consistent with the conceptual reasoning underlying our prediction of PGO main effects, the plot of PGO \times Outcome Feedback shows no such pattern.

Table 3

Means and Standard Deviations of Effort and Achievement by GO Profiles

Treatment	GO	<i>n</i>	Effort		Achievement	
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
No feedback		85				
	Low LGO	39	197.39 (198.69)	68.35	2,930.67 (2,931.90)	330.31
	High LGO	46	225.86 (223.98)	67.74	3,228.13 (3,172.90)	437.99
	Low PGO	36	202.04 (206.54)	79.60	2,970.17 (2,991.98)	360.35
	High PGO	49	220.70 (216.13)	59.89	3,180.90 (3,112.83)	437.32
Feedback		81				
	Low LGO	39	200.58 (198.10)	73.17	3,072.10 (3,081.57)	359.92
	High LGO	42	208.11 (210.68)	77.98	3,072.12 (3,052.12)	399.87
	Low PGO	40	213.92 (215.18)	77.81	3,011.58 (3,004.33)	323.24
	High PGO	41	195.28 (193.60)	72.59	3,131.17 (3,129.36)	421.72

Note. Means are reported by individual rather than combined goal orientation (GO) dimensions in keeping with the relevance of our findings. Effort represents time (minutes) spent on self-directed practice lessons and achievement represents scaled scores on a standardized achievement test (Pennsylvania System of School Assessment). Estimated marginal means are in parentheses.

Finally, ANOVA results for achievement failed to reveal a significant interaction effect for PGO \times LGO \times Outcome Feedback, $F(1, 158) = .28$, $p > .05$, $\eta^2 = .00$. Thus, Hypothesis 3b was not supported. No other main effects or interactions effects were predicted or indicated by the results.

To increase confidence in our findings and compare potential differences in GO measurement, we also analyzed the data using hierarchical regressions

Table 4

Summary of Results of ANOVAs

Variables	Effort		Achievement	
	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
PGO	.26	.61	3.79	.05
LGO	2.55	.11	2.80	.10
Feedback	.34	.56	.05	.82
PGO × LGO	.01	.94	1.47	.23
PGO × Feedback	1.73	.19	.00	.97
LGO × Feedback	.29	.59	4.58	.03
PGO × LGO × Feedback	.01	.94	.28	.60

Note. $F(1, 158)$. ANOVA = analysis of variance; PGO = performance goal orientation; LGO = learning goal orientation.

with PGO and LGO as continuous rather than dichotomized measures. The results were substantively the same as the ANOVA results, except for the LGO × Outcome Feedback interaction—a significant predictor of achievement under ANOVA, but not under regression. However, some degree of LGO moderation by outcome feedback was apparent when separate regressions were conducted with the sample split by feedback condition. LGO had a significantly positive relationship with achievement for students not provided feedback, but no relationship for students that received outcome feedback. One potential explanation is that GO's effects are more sensitive to whether an orientation is preferred or not in relative terms, rather than the absolute degree to which it is preferred.

Discussion

This present study examined differential effects of outcome feedback for approach dimensions of achievement GO. While the predictive value of each construct on its own is reasonably well established in existing research, much less is known about how they may interact to influence task effort and achievement. The findings supported two of our predictions. PGO had a positive relationship with task achievement and this relationship was indifferent to outcome feedback. In contrast, LGO had a positive

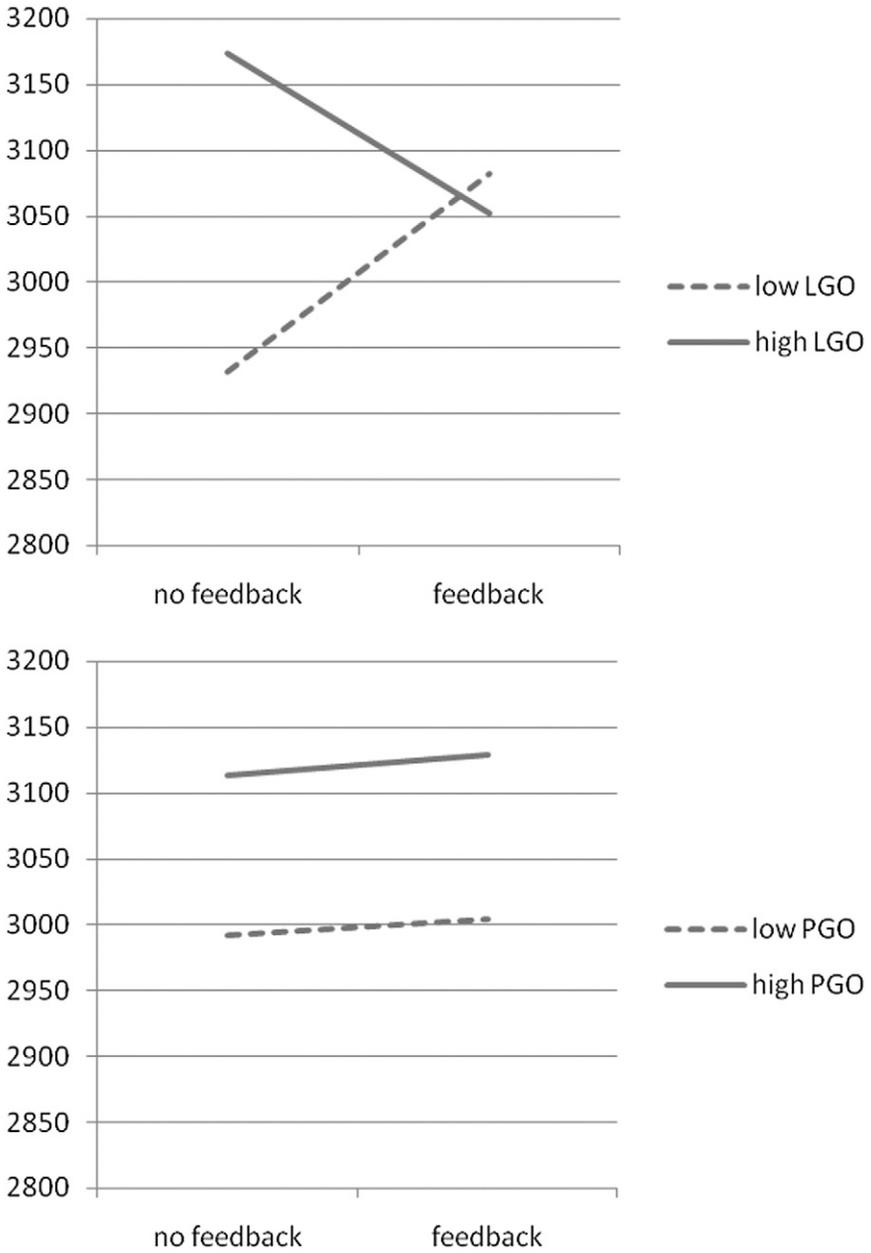


Figure 2. Effects of goal orientation and outcome feedback on achievement. LGO = learning goal orientation; PGO = performance goal orientation.

relationship with task achievement in the absence of outcome feedback and a negative relationship in its presence. We attribute this to a decrease in task interest when initial task purpose, as determined by personal GO, is incongruent with the subsequent task cues provided by outcome feedback. Indirect support for this premise has been established with manipulated state GO, as previously discussed, but our study is the first, to our knowledge, to explicitly define and test the relationship for dispositional GO.

Our prediction of interactive GO effects—that LGO's deleterious effects in the presence of outcome feedback would be mitigated by high PGO—was not supported. However, this is in keeping with extant findings that PGO did not significantly diminish the negative effects of low LGO (Pintrich, 2000b). We also did not find statistical support for the predicted relationship between GO and effort, operationalized as time devoted to completion of practice lessons, although mean differences were in the hypothesized directions in the absence of feedback. Since there is a limited amount of time to work on all school assignments, there may be a ceiling effect for effort data that attenuates actual differences in effort.

This study offers three primary contributions to GO theory and research. First, our findings showed that LGO *and* PGO were both associated with higher levels of achievement. Whereas PGO was traditionally viewed as detrimental to performance, these results corroborate the more recent recognition of positive effects for approach PGO and the view of multiple pathways to performance. We would expect the simultaneous beneficial effects of LGO and PGO to generalize to essentially any achievement task in which the purpose may be perceived in terms of learning or validation of ability, without contextual cues unduly directing interpretation.

Second, the study extends the recent mapping of GO to type of feedback sought (Janssen & Prins, 2007; VandeWalle, 2003) by differentiating a similar pattern of apparent GO preference for type of feedback imposed. Fundamentally, both perspectives support the need for congruence between personal GO motives and feedback characteristics. This represents a distinct perspective from cognitive evaluation theory (Deci, 1975; Deci & Ryan, 1980) and related approaches that have considered direct effects of feedback without highlighting individual differences.

Third, we indirectly address the call for research on goal levels (e.g., general GO and situation-specific goals) and how they interact (Pintrich, 2000a). Although outcome feedback is not a goal, it serves to clarify task goals by drawing attention to performance standards (Bobko & Colella, 1994). Our findings draw attention to the temporal order of goal perceptions as an important factor in determining how different goal levels may interact. For instance, feedback received a priori a task is shown to prime state GO for

a specific task (e.g., Butler, 2006). In our study, feedback was administered during task engagement and, it appears, interacted with the individual task expectations already held (as determined by personal GO) rather than priming a state GO.

The findings also hold an obvious important point for practice. The ubiquitous use of outcome feedback in schools and organizations may be eroding performance and, to be effective, should be examined for congruence with individual motivations for task engagement. Our findings suggest that unsolicited outcome feedback should not accompany tasks that otherwise encourage an LGO (e.g., one in which individuals are focused on developing skills). For multiple goal tasks in which individual motivations may vary, facilitation of feedback seeking can allow individuals to choose their most valued type of feedback and thus represents one way to match feedback type to individual GO. Alternatively, providing both process and outcome feedback to all individuals may avoid overemphasis, and associated negative effects, on a potentially incongruent form of feedback.

While we focused on outcome feedback due to its prevalent use in practice, future research should also explore potential differential effects of process feedback across GO dimensions. In comparison to outcome feedback, we would expect a reverse pattern of results since process feedback is thought to be congruent with LGO and incongruent with PGO (Janssen & Prins, 2007; VandeWalle, 2003). Future research should also consider other feedback qualities that were not isolated in the present study, but may be relevant to GO motives—e.g., feedback valence and frequency (VandeWalle, 2003). Furthermore, outcome feedback could be further manipulated with variations in publicness of feedback and normative standards. Outcome feedback in our study was public, but to a limited audience (student parents), and referenced normative performance standards, but did not provide a relative comparison to others. These are two aspects that are particularly relevant to validating ability, thus possibly more likely to enhance PGO effects.

We also suggest that, since only approach dimensions of GO were considered here, future research consider extending this framework to include avoidance dimensions of GO. Finally, we uncovered some differences in analysis results depending on whether GO was included as a dichotomous or continuous measure. This leads us to ponder which approach is most conceptually relevant. Future research might continue to explore the distinction between relative orientation preferences versus the absolute degree to which it is preferred.

As with any study, there are limitations of the present research that must be considered. The sample was comprised of eighth-grade students, thus generalizability of the findings to other age groups and noneducational envi-

ronments must be tested. In keeping with substantial support for the view that motivation and ability traits are generally uncorrelated (see Payne et al., 2007, for discussion), we considered cognitive ability to be randomly distributed across our sample. However, future research may find stronger results with cognitive ability controlled (Steele-Johnson et al., 2008). Finally, although median split is a common method of distinguishing high and low levels of GO, it also has inherent sample biases. For instance, individuals in the high group are not very different from those at the higher end of the low group in terms of score. To bolster confidence in our findings, we compared our dichotomous measure results with those attained using the originally scaled, continuous measures of GO. As discussed in the "Results" section, there was general consistency, although less support for the interaction of LGO and outcome feedback with the continuous measure.

In conclusion, since the GO construct is recognized as important to both academic and workplace performance (Payne et al., 2007), it is also important to understand factors that moderate GO's relationship with performance. Outcome feedback is a particularly relevant moderator on which to focus since it is both prevalent in practice and already linked to GO in the research. We are hopeful that our findings will contribute to an improved understanding of these important relationships and encourage continued research in the areas noted.

Acknowledgments

This research was supported in part by a grant from CompassLearning, LLC.

References

- Bobko, P., & Colella, A. (1994). Employee reactions to performance standards: A review and research propositions. *Personnel Psychology, 47*, 1–29.
- Butler, D. L., & Winne, P. H. (1995). Feedback and self-regulated learning: A theoretical synthesis. *Review of Educational Research, 65*, 245–268.
- Butler, R. (1987). Task-involving and ego-involving properties of evaluation: Effects of different feedback conditions on motivational perceptions, interest, and performance. *Journal of Educational Psychology, 79*, 474–482.
- Butler, R. (1992). What young people want to know when: Effects of mastery and ability goals on interest in different kinds of social comparisons. *Journal of Personality and Social Psychology, 62*, 924–943.

- Butler, R. (1993). Effects of task- and ego-achievement goals on information-seeking during task engagement. *Journal of Personality and Social Psychology*, *65*, 18–31.
- Butler, R. (2006). Are master and ability goals both adaptive? Evaluation, initial goal construction and the quality of task engagement. *The British Journal of Educational Psychology*, *76*, 595–611.
- Button, S. B., Mathieu, J. E., & Zajac, D. M. (1996). Goal orientation in organization research: A conceptual and empirical foundation. *Organizational Behavior and Human Decision Processes*, *67*, 26–48.
- Deci, E. L. (1975). *Intrinsic motivation*. New York: Plenum.
- Deci, E. L., & Ryan, R. M. (1980). The empirical exploration of intrinsic motivational processes. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 13, pp. 39–80). New York: Academic Press.
- Dweck, C. S. (1986). Motivational processes affecting learning. *The American Psychologist*, *41*, 1040–1048.
- Earley, C. P., Northcraft, G. B., Lee, C., & Lituchy, T. R. (1990). Impact of process and outcome feedback on the relation of goal setting to task performance. *Academy of Management Journal*, *33*, 87–105.
- Elliot, A. J., & Church, M. A. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, *72*, 218–232.
- Elliot, A. J., & Harackiewicz, J. M. (1994). Goal setting, achievement orientation, and intrinsic motivation: A meditational analysis. *Journal of Personality and Social Psychology*, *66*, 968–980.
- Elliot, A. J., & Harackiewicz, J. M. (1996). Approach and avoidance goals and intrinsic motivation: A meditational analysis. *Journal of Personality and Social Psychology*, *70*, 461–475.
- Farr, J. L., Hoffman, D. A., & Ringenbach, K. L. (1993). Goal orientation and action control theory: Implications for industrial and organizational psychology. In C. L. Cooper & I. T. Robertson (Eds.), *International review of industrial and organization psychology* (pp. 193–232). New York: Wiley.
- Hahn, V. S. (2009, January 15). Testing tied to grades in Missouri high school: Exams are now designed to encourage students to take them more seriously. *St. Louis Post-Dispatch*, p. A1.
- Harackiewicz, J. M., & Elliot, A. J. (1993). Achievement goals and intrinsic motivation. *Journal of Personality and Social Psychology*, *65*, 904–915.
- Janssen, O., & Prins, J. (2007). Goal orientations and the seeking of different types of feedback information. *Journal of Occupational and Organizational Psychology*, *80*, 235–249.
- Katz, I., Assor, A., Kanat-Maymon, Y., & Bereby-Meyer, Y. (2006). Interest as a motivational resource: Feedback and sex matter, but interest makes the difference. *Social Psychology of Education*, *9*, 27–42.

- Lam, S. S. K., & Schaubroeck, J. (1999). Total quality management and performance appraisal: An experimental study of process versus results and group versus individual approaches. *Journal of Organizational Behavior, 20*, 445–457.
- Lee, C. J. (2003, April 3). Pupils offered A's to take tests: Langley hoped incentive would boost performance. *Pittsburgh Post-Gazette*, p. B1.
- Meece, J., & Holt, K. (1993). A pattern analysis of students' achievement goals. *Journal of Educational Psychology, 85*, 582–590.
- Murayama, K., & Elliot, A. J. (2009). The joint influence of personal achievement goals and classroom goal structures on achievement-relevant outcomes. *Journal of Educational Psychology, 101*, 432–447.
- Niemivirta, M. (1998). Individual differences in motivational and cognitive factors affecting self-regulated learning: A pattern-oriented approach. In P. Nenninger, R. S. Jäger, A. Frey, & M. Woznitza (Eds.), *Advances in motivation* (pp. 23–42). Landau, DE: Verlag Empirische Pädagogik.
- Ordoñez, L. D., Schweitzer, M. E., Galinsky, A. D., & Bazerman, M. H. (2009). Goals gone wild: The systematic side effects of overprescribing goal setting. *Academy of Management Perspectives, 23*, 6–16.
- Pastor, D. A., Barron, K. E., Miller, B. J., & Davis, S. L. (2007). A latent profile analysis of college students' achievement goal orientation. *Contemporary Educational Psychology, 32*, 8–47.
- Payne, S. C., Youngcourt, S. S., & Beaubien, J. M. (2007). A meta-analytic examination of the goal orientation nomological net. *The Journal of Applied Psychology, 92*, 128–150.
- Pennsylvania Department of Education. (2003). Pennsylvania Consolidated State Application Accountability Workbook. Retrieved October 25, 2006, from www2.ed.gov/admins/lead/account/stateplans03/pacsa.pdf
- Pintrich, P. R. (2000a). An achievement goal theory perspective on issues in motivation terminology, theory, and research. *Journal of Educational Psychology, 25*, 92–104.
- Pintrich, P. R. (2000b). Multiple goals, multiple pathways: The role of goal orientation in learning and achievement. *Journal of Educational Psychology, 92*, 544–555.
- Rawsthorne, L. J., & Elliot, A. J. (1999). Achievement goals and intrinsic motivation: A meta-analytic review. *Personality and Social Psychology Review, 3*, 326–344.
- Salovaara, H. (2005). *Achievement goals and cognitive learning strategies in dynamic contexts of learning*. Dissertation at the University of Oulu, Finland. Retrieved October 27, 2006, from <http://herkules.oulu.fi/isbn9514277635/isbn9514277635.pdf>

- Sansone, C., Sachau, D. A., & Weir, C. (1989). Effects of instruction on intrinsic interest: The importance of context. *Journal of Personality and Social Psychology*, *57*, 819–829.
- Shih, S. S. (2005). Taiwanese sixth graders' achievement goals and their motivation, strategy use, and grades: An examination of the multiple goal perspective. *The Elementary School Journal*, *106*, 39–58.
- Steele-Johnson, D., Beauregard, R. S., Hoover, P. B., & Schmidt, A. M. (2000). Goal orientation and task demand effects on motivation, affect, and performance. *The Journal of Applied Psychology*, *85*, 724–738.
- Steele-Johnson, D., Heintz, P., & Miller, C. E. (2008). Examining situationally induced state goal orientation effects on task perceptions, performance, and satisfaction: A two-dimensional conceptualization. *Journal of Applied Social Psychology*, *38*, 334–365.
- VandeWalle, D. (1997). Development and validation of a work domain goal orientation instrument. *Educational and Psychological Measurement*, *57*, 995–1015.
- VandeWalle, D. (2003). A goal orientation model of feedback-seeking behavior. *Human Resource Management Review*, *13*, 581–604.