

CLASSROOM GOAL STRUCTURE, STUDENT MOTIVATION, AND ACADEMIC ACHIEVEMENT

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■ **Abstract** Over the past 25 years, achievement goal theory has emerged as one of the most prominent theories of achievement motivation. This chapter uses an achievement goal framework to examine the influence of classroom and school environments on students' academic motivation and achievement. Considerable evidence suggests that elementary and secondary students show the most positive motivation and learning patterns when their school settings emphasize mastery, understanding, and improving skills and knowledge. Whereas school environments that are focused on demonstrating high ability and competing for grades can increase the academic performance of some students, research suggests that many young people experience diminished motivation under these conditions. The implications of achievement goal theory for examining the impact of school reform are discussed.

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INTRODUCTION

The American classroom has changed significantly over the past 25 years. Computers and interactive software are common in most classrooms today, and rows of student desks have been replaced with moveable tables and chairs that promote collaborative learning among two or more students. Many states and school districts have reduced class size to increase learning opportunities, especially for young or high-risk students. Reform at the middle school level has introduced block scheduling, advisory teams, schools-within-schools, and other structural changes to meet the developmental needs of young adolescents. Additionally, major professional organizations such as the National Council of Teachers of Mathematics have called for paradigm shifts in how teachers think about learning and teaching. Rather than focusing on rote learning and memorization, curriculum standards that began to emerge in the early 1990s emphasized the importance of individual inquiry, problem solving, collaborative learning, and mastery of key concepts. As these reforms were beginning to take hold, new federal legislation, the *Leave No Child Left Behind Act of 2001*, was enacted to increase accountability and performance standards for public schools. It is anticipated that this new legislation will close achievement gaps and ensure that all students, regardless of any existing disadvantage, will make significant achievement gains in school.

With the exception of research on class size, little evidence is available to evaluate the effects of various reform efforts of the past 25 years on student learning and motivation. Even fewer studies have examined how these different reform efforts influence important aspects of the classroom or school environment that young people experience. Child development research suggests that schools, along with the family and peer group, are one of the most influential social contexts for children's development (Eccles 2004). In this chapter, we adopt an achievement goal framework for examining the influence of different classroom and school environments on children's development as learners. We emphasize the influence of classroom environments not only on students' academic engagement and achievement, but also on their motivation and their self-perceptions. Schools, in our view, play a critical role in all aspects of children's development.

The chapter begins with a brief discussion of achievement goal theory in relation to other prominent achievement motivation theories. Subsequent sections describe the types of achievement goals students adopt in classroom settings, the measures

that are used to assess achievement goals, and the influence of different achievement goals on various developmental outcomes, including measures of motivation to learn, classroom engagement and adjustment, and academic achievement. The chapter also includes research on the ways instructional practices, such as grading and evaluation practices, can create different goal structures in the classroom and influence student outcome measures. We next discuss efforts to change the goal structures of classrooms and schools. Finally, in our conclusion, we discuss the implications of achievement goal theory for understanding the impact of reform efforts on students and suggest some directions for future research.

ACHIEVEMENT GOAL THEORY AND CLASSROOM ENVIRONMENTS

Overview of Achievement Goal Theory

Motivational theories focus on the processes that explain goal-directed activity (Pintrich & Schunk 2002, p. 5). Generally, motivation theorists are interested in explaining physical activity such as task engagement and persistence, as well cognitive activities such as problem solving and decision making. In educational research, motivation theories are most often used to explain students' activity choice, engagement, persistence, help seeking, and performance in school. Motivation is also used as a measure of school adjustment (Roeser & Eccles 1998). Students who are alienated or disaffected generally lack motivation to attend school and to engage in learning.

Motivation research has a long history, beginning with the philosophy of William James and extending to achievement goal theories of the 1980s. Many early theories explained motivated behavior in terms of drives, instincts, motives, and other internal traits (Weiner 1990). Motivation has also been explained in terms of behavioral associations involving reward contingencies (Pintrich & Schunk 2002). More contemporary theories focus on social-cognitive processes as sources of motivation. This view is represented in attribution theories of motivation, which link achievement striving to how individuals interpret their success and failures in achievement situations (Weiner 1979). Another social-cognitive approach to motivation, expectancy-value theory, links achievement-related behavior to individual expectancy and value perceptions (Atkinson 1964; Eccles 1983; Wigfield & Eccles 1992, 2000). Individuals are more likely to engage in a particular achievement task when they expect to do well and when the task has some value to them. Similarly, self-efficacy theories of achievement motivation emphasize the importance of individual judgments of capability (Bandura 1986, Schunk 1991).

Achievement goal theory is situated in this social-cognitive view of motivation. Within the past 25 years, it has emerged as one of the most prominent theories of motivation (Anderman & Wolters 2005, Pintrich 2000). It has also served as an important lens for analyzing the influence of different classroom structures and

school environments on student motivation and learning. Rather than focusing on ability perceptions and causal attributions, goal theories of motivation focus on the types of goals individuals pursue in achievement situations. Goal theorists view behavior as purposeful, intentional, and directed toward the attainment of certain goals (Pintrich & Schunk 2002). Achievement goal theorists focus specifically on goals involving the development or demonstration of competence (Maehr & Nicholls 1980, Nicholls 1984). According to Nicholls (1984, p. 328), “the distinguishing feature of achievement behavior is its goal of competence or perception of competence,” and ability can be defined in several different ways. Thus, the criteria or standards of excellence people use to judge their competence are key to achievement goal theory. This point is critical because classrooms and school environments differ with regard to the evaluation standards used to assess students’ academic progress and achievement (Ames 1992a,b; Ames & Archer 1988; Eccles & Midgley 1989; Nicholls 1989).

Defining Achievement Goals

Achievement goal theorists focus on students’ intentions or reasons for engaging, choosing, and persisting at different learning activities. Early research on achievement goals focused on two contrasting forms of approach motivation and have been labeled learning versus performance (Dweck & Elliot 1983), task involved versus ego involved (Nicholls 1984), mastery versus ability focused (Ames 1992a, Ames & Archer 1988), and task focused versus ability focused (Maehr & Midgley 1991). Although there has been some debate as to whether these goal pairs represent similar constructs (Thorikildsen & Nicholls 1998), most researchers today view these goal sets as having sufficient overlap to be treated as conceptually similar constructs (Pintrich & Schunk 2002). For the purposes of this chapter, we use “mastery” and “performance” to describe these different goal orientations.

A mastery goal orientation is defined in terms of a focus on developing one’s abilities, mastering a new skill, trying to accomplish something challenging, and trying to understand learning materials. Success is evaluated in terms of self-improvement, and students derive satisfaction from the inherent qualities of the task, such as its interest and challenge. By contrast, a performance goal orientation represents a focus on demonstrating high ability relative to others, striving to be better than others, and using social comparison standards to make judgments of ability and performance. A sense of accomplishment is derived from doing better than others and surpassing normative performance standards.

In recent years, researchers have distinguished between two types of performance goals. Performance-approach goals focus on the attainment of favorable judgments of competence; whereas performance-avoidance goals focus on avoiding unfavorable judgments of ability (Elliot & Church 1997, Elliot & Harackiewicz 1996). Similarly, Pintrich (2000) argued that mastery goals should be broken down into master-approach goals and mastery-avoid goals. When students are focused on mastery-approach variables, they want to learn, master, and truly understand

the task at hand. In contrast, when students are focused on mastery-avoid goals, they want to avoid misunderstanding or not being able to learn from a specific task. Thus far, mastery-approach and mastery-avoid goals have not been widely studied.

Relations of Individual Achievement Goals to Achievement-Related Behavior

Research has identified a number of achievement-related patterns that are “set in motion” by different motivational goals (Elliot & Dweck 1988, p. 11). Much of this research indicates that students show the most positive achievement patterns when they are focused on mastery goals. With this goal focus, students persist at difficult tasks (Elliot & Dweck 1988, Stipek & Kowalski 1989), report high levels of task involvement (Harackiewicz et al. 2000), report high levels of effort and persistence (Grant & Dweck 2003, Miller et al. 1996, Wolters 2004), and use learning strategies that enhance conceptual understanding and recall of information (Ames & Archer 1988; Elliot & McGregor 2001; Grant & Dweck 2003; Green & Miller 1996; Meece et al. 1988; Meece & Miller 2001; Nolen 1988, 2001; Nolen & Haladyna 1990; Wolters 2004). Mastery goals are also associated with positive perceptions of academic ability and self-efficacy (Meece et al. 1988, Midgley et al. 1998, Roeser et al. 1996, Wolters 2004). The positive relations of mastery goals to both achievement behaviors and ability perceptions are found across grade levels and subject areas. One significant limitation of this research is that few researchers have demonstrated positive links between mastery goals and academic performance. For the most part the expected positive relation between mastery goals and academic performance has not been consistently found (Barron & Harackiewicz 2001, Elliot & Church 1997, Harackiewicz et al. 2000, Herman et al. 2005, Miller et al. 1996, Pintrich 2000, Skaalvik 1997), although Wolters and his colleagues (1996) reported a positive relation for a sample of junior high school students.

Performance goals also show some interesting relations to achievement-related behaviors across studies. A good deal of evidence suggests that performance goals are associated with surface-level learning strategies (memorizing and rehearsing information), which do not necessarily promote conceptual understanding (Elliot & Harackiewicz 1996, Graham & Golan 1991, Kaplan et al. 2002b, Meece et al. 1988, Nolen 1988). Performance goals are also associated with self-handicapping strategies (e.g., goofing off, procrastinating, etc.) for late elementary school-aged children (Urdu et al. 1998), with academic cheating behaviors among middle school students (Anderman et al. 1998), and with lower grades for college students (Elliot & Church 1997, Elliot & McGregor 2001, Skaalvik 1997). However, these patterns are not consistent across studies, and researchers have emphasized the need to distinguish between approach and avoidance forms of performance goals (Harackiewicz et al. 2002). Some evidence suggests that performance-approach goals (demonstrating ability and outperforming others) are positively associated

with persistence and achievement outcomes, especially for college students (Elliot et al. 1999, Harackiewicz et al. 2002).

Although performance and mastery goals are most commonly examined as separate goal orientations, evidence suggests that students hold multiple goals in classroom situations (Bouffard et al. 1995, Harackiewicz et al. 1998, Meece & Holt 1993, Pintrich 2000, Wentzel 1992). Research has further suggested that multiple combinations of goals (e.g., high mastery and high performance) may have different motivation and achievement outcomes. Current studies emphasize the need to acknowledge that learners may simultaneously adopt multiple goals that are relatively more or less adaptive for learning. However, it is still not clear what combination of goals is most adaptive for which group of students, achievement tasks, and learning contexts (Midgley et al. 2001).

It is also important to point out that the findings described above were based on assessments of personal goal orientations. These goal orientations may be shaped, in part, by critical dimensions of the classroom and school environment where the assessments take place. The section below describes how the goal structures of classrooms are assessed, and their relation to personal goals and learning outcomes.

CLASSROOM GOAL STRUCTURES

Along with providing a framework for studying individual differences in student motivation, achievement goal theory is also useful for analyzing the influence of classroom environments on students' motivation and learning patterns. Research focused on the classroom has examined how teachers may create different goal structures in the classrooms through their use of various instructional, evaluation, and grouping strategies (Kaplan et al. 2002b). For example, some teachers are known to differ in their use of ability grouping or competitive grading practices, which can increase the salience of performance goals. Other teachers focus on skill development, mastery, and improvement, which can lead students to adopt a mastery orientation. As described below, a variety of measures have been used to assess the goal structures of classrooms, including student questionnaires, teacher reports, and observations.

The TARGET System

Ames & Archer (1988) first designed and used a student-report measure to assess the salience of mastery and performance goals in the classroom. On the basis of existing research and theory, they identified a set of classroom dimensions differentially related to the adoption of each goal orientation. For example, to assess a mastery goal structure, students were asked to rate their agreement with items related to the importance of understanding their work, learning from their mistakes, and working hard to learn in their classrooms. Building on this research,

TABLE 1 Dimensions of the TARGET system*

Task dimension	Variety, challenge, organization, and interest level of learning activities
Authority dimension	Opportunities to take responsibility for learning, to make decisions, and to assume leadership role
Recognition dimension	Incentives and rewards focused on individual effort, improvement, and accomplishments
Grouping dimension	Heterogeneous grouping structures that promote peer collaboration and cooperation
Evaluation dimension	Evaluation systems that are varied, private, and assess individual progress, improvement, and mastery
Timing dimension	Opportunities to plan schedules and complete assignments at appropriate and optimal rates

*From Ames (1992a,b).

Ames (1992a,b) developed the TARGET system for identifying key instructional practices associated with a mastery or performance orientation in the classroom. The TARGET system focuses on instructional strategies related to task assignments (T), authority relations (A), recognition systems (R), grouping procedures (G), evaluation practices (E), and use of time (T). Examples of instructional practices that would potentially emphasize a mastery goal structure are shown in Table 1. Researchers have recently used the TARGET system to create survey instruments to assess students' perceptions of the goal structure of high school (Greene et al. 2004) and college (Church et al. 2001) classes.

Patterns of Adaptive Learning Survey (PALS)

Midgley and her colleagues (2002) have developed a variety of methods to assess the salience of different goal structures in the classroom. The Patterns of Adaptive Learning Survey (PALS) has been widely used to assess students' perceptions of the classroom goal structures, as well as personal goal orientations. Building on the research of Ames (1992a), the PALS goal structure measures focus on classroom- or school-level practices that reflect either mastery- or performance-oriented instructional practices. Sample items from the PALS for assessing classroom goal structures are presented in Table 2. These scales demonstrate high internal consistency (Midgley 2002). In addition, confirmatory factor analyses procedures indicate that classroom goal structures are distinct from personal goal orientations (Wolters 2004). However, as described below, students' perceptions of classroom goal structures are predictive of the types of personal goals students adopt in the classroom.

TABLE 2 Sample items to assess classroom goal structures: Patterns of Adaptive Learning Survey***Mastery goal structure**

- My teacher thinks mistakes are okay as long as we are learning.
- My teacher wants us to understand our work, not just memorize it.
- My teacher really wants us to enjoy learning new things.
- My teacher recognizes us for trying hard.
- My teacher gives us time to really explore and understand new ideas.

Performance goal structure

- My teacher points out those students who get good grades as an example to all of us.
- My teacher lets us know who gets the highest scores on a test.
- My teacher makes it obvious when certain students are not doing well on their work.
- My teacher tells us how we compare with other students.
- Only a few students do really well in my class.
- My teacher calls on smart students more than on other students.

*From Anderman & Midgley (2002), Midgley et al. (1997).

PALS researchers have also collected information from teachers about their goal-related approaches to instruction (Urdu et al. 1998). From a list of statements, teachers were asked to identify instructional strategies they used in their classroom. Items assessed teachers' emphasis on mastery goals ("In my classroom, I stress to my students that I want them to understand their work, not memorize it") and performance goals ("In my classroom, I point out those students who do well academically, as a model for other students"). Students of these teachers were also asked to provide reports of the classroom goal structure. Results indicate low positive correlations between teacher and student reports of the same goal emphasis. Additionally, these two sources of data each contributed uniquely to the prediction of student outcomes (Urdu et al. 1998).

Observational and Multimethod Studies of Classroom Goal Structures

Meece (1991) combined survey and observational data to study differences in the goal structures of 10 elementary science classrooms. Using classroom means on student mastery goal ratings, classes were characterized as low or high mastery. Observational records were then analyzed to identify differences in teaching approaches. The results revealed that teachers of low- and high-mastery-oriented students differed in the degree to which they (*a*) promoted meaningful learning and understanding, (*b*) adapted instruction to the developmental levels and personal interests of their students, (*c*) established learning structures supportive of student autonomy and peer collaboration, and (*d*) emphasized the intrinsic value of learning. In a similar study, Patrick et al. (2001) used the PALS measures of classroom goal structures to identify 4 fifth-grade classrooms that were perceived by students as emphasizing either (*a*) high mastery and low performance, (*b*) high

performance and low mastery, (c) both high mastery and performance, and (d) both low mastery and performance. Observational data were then used to compare the instructional practices of those teachers. Overall, there were a number of differences in practices between the high- and low-mastery-oriented classrooms and many fewer differences between the high- and low-performance classes. Two themes that distinguished the high- and low-mastery-oriented teachers were (a) differences in teachers' apparent implicit theories of how students learn, and (b) the interface between the social and affective climate of the classrooms with the academic dimension (see Anderman et al. 2002).

In another study, Turner and her colleagues (2002) used multiple methods to examine instructional variables related to students' use of avoidance strategies in mathematics. In this study, qualitative analyses of classroom discourse suggested that high-mastery/low-avoidance classrooms were characterized by instructional practices such as affording students the opportunity to demonstrate new abilities, providing motivational support for learning, and helping students to understand complex topics. When combined with data on student outcomes, findings indicated that perceptions of a mastery goal structure were related to less frequent use of avoidance strategies.

CLASSROOM GOAL STRUCTURES, PERSONAL GOALS, AND ACHIEVEMENT BEHAVIOR

We discussed above how students' personal achievement goals shape their behavior and learning in educational settings. How might classroom goal structures play a role in these processes? Classroom goal structures are generally viewed as precursors of students' personal goal orientations, which are thought to have a more proximal influence on motivation and achievement patterns (Church et al. 2001, Greene et al. 2004, Nolen 2001, Nolen & Haladyna 1990, Roeser et al. 1996, Urdan 2004). Additionally, student characteristics such as gender, ability level, or existing goal orientations are believed to influence the ways students perceive the classroom environment (Roeser et al. 1996). For the most part, studies using path analysis methods support these claims. Students' personal goal orientations correspond with their perceptions of the classroom goal structure (Anderman & Midgley 1997, Roeser et al. 1996, Urdan 2004), and these relations are found even when differences in student characteristics are controlled. When students perceive their classrooms or schools as emphasizing effort and understanding, they are more likely to adopt mastery-oriented goals. Conversely, students are more likely to adopt performance-oriented goals when they perceive their school environment as focused on competition for grades and social comparisons of ability. Consistent with earlier research, students' personal goals in turn are related in the expected manner to various motivation, strategy use, and performance measures. Thus, several studies indicate that classroom goal structures influence student behavior and learning by shaping the type of personal goals that students adopt.

There is also some evidence to suggest that perceptions of the classroom goal structure may exert a direct effect on outcome measures as well. The use of multi-level data analysis procedures enables researchers to test the predictive influence of classroom goal structures at both the individual and classroom levels (Kaplan et al. 2002b, Turner et al. 2002, Urdan et al. 1998, Wolters 2004). In this research, learning environments may be characterized as having either a greater mastery or performance focus (or a simultaneous focus on both mastery and performance) when students' perceptions of the goal structure are aggregated to the classroom or school level.

Evidence to date indicates that approximately 5% to 35% of the variation in students' goal structure perceptions is related to classroom differences. When added to the analyses, mean perceptions of the classroom goal structure explain variance in some outcome measures not explained by individual perceptions of classroom goal structures, personal achievement goals, or student background characteristics. For example, Turner and her colleagues (2002) reported that aggregated perceptions of the classroom emphasis on mastery emerged as a significant negative predictor of avoidance behaviors in a large sample of sixth-grade students. Similarly, Kaplan and colleagues (2002b) found that ninth-grade students reported less disruptive behavior in classes perceived on the average as emphasizing a mastery goal structure. In another study of junior high school students, Wolters (2004) found that mean perceptions of performance-approach goal structures explained variance in students' self-efficacy ratings, over and above students' personal achievement goals and background characteristics. Studies using multilevel data analysis procedures also reveal that teachers' reports of their instructional practices can also explain classroom differences in some student outcome measures (Anderman et al. 2001, Anderman & Young 1994, Kaplan et al. 2002b), but these relations generally are not as strong as individual or group-level perceptions of the learning environment. Therefore, it is the students' subjective perceptions that are most critical for understanding achievement-related patterns in the classroom (Ames 1992a, Meece et al. 2003, Ryan & Grolnick 1986).

APPLICATIONS OF GOAL THEORY TO SCHOOL TRANSITIONS AND REFORM

School Transitions and Goal Structures

Research generally indicates negative effects of the transition from elementary school to middle school on student motivation (e.g., Eccles & Midgley 1989, Wigfield et al. 1991). Eccles & Midgley (1989) argued that the contexts of most middle schools focus less on intrinsic involvement with tasks, and more on grades and comparisons, than do elementary schools. Whereas Eccles & Midgley's arguments were not based in goal theory, they strongly echoed the sentiments of

goal theorists. More recently, empirical research has demonstrated that Eccles and Midgley's observations are supported when examined via the lens of goal theory.

For example, in one study, Midgley et al. (1995) examined the self-reported instructional practices of elementary and middle school teachers. Results indicated that elementary school teachers reported using instructional practices that emphasized mastery goals more than did middle school teachers. In a related study, Anderman & Midgley (1997) conducted longitudinal research examining changes in perceived goal structures across the transition from elementary to middle school. Results indicated that students perceived a greater emphasis on mastery goals during instruction prior to the middle school transition than after the transition. In addition, students reported more of an emphasis on performance goals after the transition to middle school than before. In another longitudinal study, Anderman & Anderman (1999) found that personal mastery goals decreased and personal performance goals increased as students made the transition from elementary to middle school.

Goal orientation also is related to other changes in motivation across the middle school transition. Anderman (1999) examined changes in students' reported levels of affect before and after the transition to middle school. Results indicated that perceptions of a performance goal structure in classrooms predicted a decline in positive affect across the transition. The Anderman & Anderman (1999) study also found that increases in performance goals across the transition were negatively associated with perceptions of school belonging, whereas increases in mastery orientation across the transition were associated positively with a perceived sense of school belonging.

Applications of Goal Theory to School Reform

Achievement goal research has focused on examining student outcomes in laboratory or classroom settings. However, a few researchers have used goal orientation theory to help guide school reform. Most prominently, Midgley & Maehr (1999) engaged in several projects aimed at the reform of school-wide and classroom-specific instructional practices, based on achievement goal theory. Briefly summarized, these researchers worked with teachers, parents, and administrators at both the elementary and middle school level to examine and reform instructional practices in line with achievement goal-orientation theory. Working groups met for several years to critically examine school policies and practices in light of mastery and performance goals. Instructional staff members were continuously asked to examine the potential effects of their schools' policies on a variety of outcomes. More specifically, staff members considered whether individual policies fostered mastery or performance goals.

Using a quasi-experimental design, Maehr & Midgley (1999) demonstrated that the schools were able to change their policies and practices in order to foster the

development of personal mastery goals in students. Teachers consciously chose to emphasize mastery goals over performance goals, and the various changes in practice and policy that were implemented had positive effects on a number of outcomes (e.g., Anderman et al. 1999, Maehr & Midgley 1996, Midgley & Maehr 1999). For example, in the middle school study, longitudinal analyses indicated that students who made the transition from elementary school to the middle school that had used goal theory to guide reform exhibited fewer shifts toward performance and extrinsic goals over time than did students who transitioned into a more performance-oriented comparison school (Anderman et al. 1999).

Goal Structures and Current Reforms in Education

This chapter began with a discussion of current school reform efforts. Of the reforms currently underway in America's schools, the *No Child Left Behind Act of 2001* (NCLB) is expected to have the most widespread impact on students, teachers, and schools. This legislation requires school personnel to assess annually students' progress in reading and mathematics from grade 3 to 8, to increase teacher quality, to use scientifically validated teaching practices, and to provide alternatives for parents when schools are low performing. The implementation and enforcement of NCLB have sparked a good deal of controversy. For motivation researchers, the major concern is the impact of testing and accountability on teacher and students on the motivational climate on classrooms and schools. Although public scrutiny of test scores may motivate teachers and students to work harder (Roderick & Engel 2001), research on classrooms goal structures suggests that a focus on testing and evaluation can lead to a performance orientation in classrooms and schools. For older and high-ability students, a performance goal structure may enhance motivation and achievement. However, studies of elementary and middle school students, who will be most affected by NCLB, show a different pattern. For these students, performance goals are negatively related to intrinsic motivation, to adaptive forms of coping in the presence of challenge and failure, and to deeper processing of course material. Performance goal structures are also correlated with greater self-reported cheating and disruptive behaviors in the classroom, which can reduce learning opportunities for all students. A careful examination of the effects of NCLB on student achievement, motivation, and emotional well-being is needed to address current controversies in the field.

SUMMARY

In the past 25 years, goal theories of achievement have emerged as an important framework for analyzing the influence of learning environments on a range of developmental and learning outcomes. Much of this research indicates that young people adopt the most positive and adaptive approach to learning when the school

environment emphasizes learning, understanding, and improving skills and knowledge. Although classroom environments that are focused on demonstrating ability and competing for grades can increase the self-efficacy beliefs and academic performance of some students, evidence suggests that many young people experience diminished motivation under these conditions. Students also report more disruptive behaviors (teasing, talking out of turn, etc.) as well as increases in school truancy and academic cheating under performance goal structures (Anderman & Midgley 2002, Kaplan et al. 2002a, Roeser & Eccles 1998).

Results across studies also emphasize the important role of students' perceptions of their learning environments (Schunk & Meece 1992). We have known for some time that young people interpret and respond differently to their schooling experiences. To some degree, students' perceptions may resemble teachers' or observers' reports. However, the "functional significance" of students' classroom and school experiences is most important in studies of children's development in school settings (Ryan & Grolnick 1986, p. 550). It is important therefore to examine the school environment from the learners' perspective (McCombs 2003, Meece et al. 2003).

One intriguing anomaly in achievement goal research is the lack of strong relations between mastery goals and student achievement. Students who are master oriented report a desire to learn and to improve their abilities, yet this personal and classroom goal focus is generally unrelated to measures of academic performance, such as grades and test scores, when prior ability is controlled (Anderman & Midgley 1997, Elliot & Church 1997, Elliot et al. 1999, Harackiewicz et al. 2000, Herman et al. 2005, Roeser et al. 1996, Skaalvik 1997, Wolters 2004). In part, this missing link may be due to how academic performance is measured. Most measures of achievement are not designed to assess a student's deep understanding of a concept or content area. Grant & Dweck (2003) recently reported that mastery goals show stronger positive relations to performance measures when a high degree of challenge is present, when processing of complex or difficult material is needed, or when the learning task itself is personally valued. Additionally, there is evidence to suggest that the influence of mastery goals on learning outcomes may be mediated through self-efficacy beliefs (Roeser et al. 1996) or deep processing strategies (Grant & Dweck 2003). Accordingly, as originally conceived, learning or mastery goals set in motion various affective or cognitive processes that have a more immediate impact on academic performance. The processes by which mastery goals affect academic performance needs further examination (Grant & Dweck 2003, Herman et al. 2005). Moreover, most studies of classroom goal structures pay little attention to the quality of instruction students receive (Meece et al. 2003). A mastery goal focus is likely to have a greater impact on student achievement, especially for students who lack prerequisite knowledge and skills, when teaching practices facilitate mastery of concepts and content. Additional studies are needed to examine the quality of instruction students receive in mastery-focused classrooms.

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