

Motivation as an Enabler for Academic Success

Elizabeth A. Linnenbrink
University of Toledo

Paul R. Pintrich
The University of Michigan, Ann Arbor

Abstract. Student motivation as an academic enabler for school success is discussed. Contrary to many views, however, the authors conceive of student motivation as a multifaceted construct with different components. Accordingly, the article includes a discussion of four key components of student motivation including academic self-efficacy, attributions, intrinsic motivation, and achievement goals. Research on each of these four components is described, research relating these four components to academic achievement and other academic enablers is reviewed, and suggestions are offered for instruction and assessment.

Psychologists and educators have long considered the role of motivation in student achievement and learning (for a review see Graham & Weiner, 1996). Much of the early research on student achievement and learning separated cognitive and motivational factors and pursued very distinct lines of research that did not integrate cognition and motivation. However, since at least the 1980s there has been a sustained research focus on how motivational and cognitive factors interact and jointly influence student learning and achievement. In more colloquial terms, there is a recognition that students need both the cognitive skill and the motivational will to do well in school (Pintrich & Schunk, 2002). This miniseries continues in this tradition by highlighting the contribution of both motivational and cognitive factors for student academic success.

The integration of motivational and cognitive factors was facilitated by the shift in motivational theories from traditional achievement motivation models to social cognitive

models of motivation (Pintrich & Schunk, 2002). One of the most important assumptions of social cognitive models of motivation is that motivation is a dynamic, multifaceted phenomenon that contrasts with the quantitative view taken by traditional models of motivation. In other words, these newer social cognitive models do not assume that students are either “motivated” or “not motivated” or that student motivation can be characterized in some quantitative manner between two endpoints on a single continuum. Rather, social cognitive models stress that students can be motivated in multiple ways and the important issue is understanding how and why students are motivated for school achievement. This change in focus implies that teachers or school psychologists should not label students as “motivated” or “not motivated” in some global fashion. Furthermore, assessment instruments that generate a single global “motivation” score for students may be misleading in terms of a more multifaceted understanding of student motivation. Accord-

Address correspondence regarding this article to Elizabeth A. Linnenbrink, College of Education, The University of Toledo, Mail Stop 923, Foundations of Education, 2801 West Bancroft Street, Toledo, OH 43606. Email: lisa.linnenbrink@utoledo.edu.

Copyright 2002 by the National Association of School Psychologists, ISSN 0279-6015

ingly, in the discussion of motivation as an academic enabler, many aspects of student motivation including self-efficacy, attributions, intrinsic motivation, and goals are considered.

A second important assumption of social cognitive models of motivation is that motivation is *not* a stable trait of an individual, but is more situated, contextual, and domain-specific. In other words, not only are students motivated in multiple ways, but their motivation can vary depending on the situation or context in the classroom or school. Although this assumption makes it more difficult for research and assessment efforts, it means that student motivation is conceived as being inherently changeable and sensitive to the context. This provides hope for teachers and school psychologists and suggests that instructional efforts and the design of classrooms and schools can make a difference in motivating students for academic achievement.

This situated assumption means that student motivation probably varies as a function of subject matter domains and classrooms (e.g., Bong, 2001). For example, within social cognitive models, motivation is usually assessed for a specific subject area such as math, reading, science, or social studies and in reference to a specific classroom or teacher. In some ways, this also fits with teachers' and parents' own perceptions and experiences as they find that some children are quite motivated for mathematics, whereas others hate it, and also observe these motivational differences with other subject areas as well. However, this implies that assessment instruments that assess general student motivation for school or academics may not be as useful as more domain or context specific assessment tools.

A third assumption concerns the central role of cognition in social cognitive models of motivation. That is, it is not just the individual's cultural, demographic, or personality characteristics that influence motivation and achievement directly, or just the contextual characteristics of the classroom environment that shape motivation and achievement, but rather the individual's active regulation of his or her motivation, thinking, and behavior that mediates the relationships between the person, context,

and eventual achievement. That is, students' own thoughts about their motivation and learning play a key role in mediating their engagement and subsequent achievement.

Following from these three general assumptions, social cognitive motivational theorists have proposed a large number of different motivational constructs that may facilitate or constrain student achievement and learning. Although there are good theoretical reasons for some of these distinctions among different motivational theories and constructs, in many cases they can be confusing and less than helpful in developing applications to improve student motivation and subsequent learning in school (Pintrich, 2000a). Rather than discussing all the different motivational constructs that may be enablers of student achievement and learning, this article will focus on four key families of motivational beliefs (self-efficacy, attributions, intrinsic motivation, and goal orientations). These four families represent the currently accepted major social cognitive motivational theories (Eccles, Wigfield, & Schiefele, 1998; Graham & Weiner, 1996; Pintrich & Schunk, 2002) and, therefore, seem most relevant when thinking about how motivation relates to achievement and other academic enablers. For each of the four general components, the components are defined, a summarization is given for how the motivational component is related to student achievement and learning as well as the other academic enablers discussed in this special issue, and some implications for instruction and assessment are suggested. Although these four families are interrelated, it is beyond the scope of this article to present an interrelated model of self-efficacy, attributions, intrinsic motivation, and goal orientations. Readers interested in a more comprehensive overview may refer to Pintrich and Schunk's (2002) detailed discussion of motivational processes in schooling.

Adaptive Self-Efficacy Beliefs as Enablers of Success

A common layperson's definition of motivation is that it involves a strong personal interest in a particular subject or activity. Stu-

dents who are interested are motivated and they learn and achieve because of this strong interest. Although interest as a component of student motivation will be discussed later, one of the more important motivational beliefs for student achievement is self-efficacy, which concerns beliefs about capabilities to do a task or activity. More specifically, self-efficacy has been defined as individuals' beliefs about their performance capabilities in a particular context or a specific task or domain (Bandura, 1997). Self-efficacy is assumed to be situated and contextualized, not a general belief about self-concept or self-esteem. For example, a student might have high self-efficacy for doing algebra problems, but a lower self-efficacy for geometry problems or other subject areas, depending on past successes and failures. These self-efficacy beliefs are distinct from general self-concept beliefs or self-esteem.

Although the role of self-efficacy has been studied in a variety of domains including mental health and health behavior such as coping with depression or smoking cessation, business management, and athletic performance, a number of educational psychologists have examined how self-efficacy relates to behavior in elementary and secondary academic settings (e.g., Bandura, 1997; Eccles et al., 1998; Pintrich, 2000b; Pintrich & De Groot, 1990; Schunk, 1989a, 1989b, 1991). In particular, self-efficacy has been positively related to higher levels of achievement and learning as well as a wide variety of adaptive academic outcomes such as higher levels of effort and increased persistence on difficult tasks in both experimental and correlational studies involving students from a variety of age groups (Bandura, 1997; Pintrich & Schunk, 2002). Students who have more positive self-efficacy beliefs (i.e., they believe they can do the task) are more likely to work harder, persist, and eventually achieve at higher levels. In addition, there is evidence that students who have positive self-efficacy beliefs are more likely to choose to continue to take more difficult courses (e.g., advanced math courses) over the course of schooling (Eccles et al., 1998). In our own correlational research with junior high students in Michigan, we have consistently

found that self-efficacy beliefs are positively related to student cognitive engagement and their use of self-regulatory strategies (similar in some ways to study skills) as well as general achievement as indexed by grades (e.g., Pintrich, 2000b; Pintrich & De Groot, 1990; Wolters, Yu, & Pintrich, 1996).

In summary, both experimental and correlational research in schools suggests that self-efficacy is positively related to a host of positive outcomes of schooling such as choice, persistence, cognitive engagement, use of self-regulatory strategies, and actual achievement. This generalization seems to apply to all students, as it is relatively stable across different ages and grades as well as different gender and ethnic groups (Bandura, 1997; Pintrich & Schunk, 2002). From these findings, it seems clear that self-efficacy beliefs are related to several of the other academic enablers reviewed in this miniseries. In particular, self-efficacy has been associated with increased persistence relating it to engagement. Evidence has also been reviewed suggesting that self-efficacy promotes adaptive strategy use such as self-regulation suggesting that students with high self-efficacy beliefs will also be likely to use adaptive and appropriate study skills. In terms of social behavior, less is known about the relation of academic self-efficacy to peer relations. However, recent research suggests that both perceived social competence and the endorsement of social responsibility goals (adhering to social norms or rules) are associated with higher reports of academic self-efficacy (Patrick, Hicks, & Ryan, 1997). In summary, having generally positive self-efficacy is adaptive for school learning and achievement as well as other academic enablers, suggesting that schools should seek to develop positive self-efficacy beliefs in their students.

At the same time, two important caveats need to be stressed about attempts to facilitate positive self-efficacy beliefs in students. First, as noted earlier, self-efficacy is *not* self-esteem and the two constructs should not be confused. Self-efficacy is a judgment of task-specific capabilities and is based on actual accomplishments and success and failures, whereas self-esteem is a much more general affective evalu-

ation of the self. The second caveat relates to the issue of inaccuracy in self-efficacy beliefs. The generalization about the positive link between self-efficacy and achievement may suggest that self-efficacy should always be as high as possible. However, it seems that it is more adaptive to have self-efficacy beliefs that are relatively accurate or calibrated to actual accomplishments (Bandura, 1997). For example, a novice mountain climber should have self-efficacy beliefs that match his actual skills, or are a little higher than actual skills, but are not so overly positive that he attempts a climb that is well beyond his capabilities. In the latter case, serious injury or even death could result from having overly positive beliefs about his capabilities for mountain climbing. In the same manner, students should not overestimate or underestimate their capabilities for schoolwork, rather they should have fairly accurate, but optimistic, beliefs about their efficacy to accomplish school work. This implies that teachers and other school personnel should attempt to foster positive, but accurate, self-efficacy beliefs.

In terms of instructional implications, self-efficacy is best facilitated by providing opportunities for students to succeed on tasks within their range of competence and through these experiences actually develop new capabilities and skills. Self-efficacy is not fostered by providing inaccurate or effusive praise to students in the absence of specific task accomplishments. This type of praise is meaningless and invalid and may foster inaccurate beliefs in students who think they are capable of some task, such as reading, when in fact they are not very good readers (Pintrich & Schunk, 2002). Therefore, it is important that educators calibrate tasks and assessments so that success is attainable. By having a variety of tasks in the classroom and multiple forms of assessments such as portfolios, essays, and project-based assessments, classroom teachers may be able to provide all students with opportunities to be successful, thus fostering self-efficacy among all students.

Self-efficacy is typically assessed using self-report questionnaires. For instance, as part of larger survey instruments to assess motivation, strategy use, and general attitudes about

schooling, both Pintrich and his colleagues (Pintrich, Smith, Garcia, & McKeachie, 1993) and Midgley and her colleagues (Midgley et al., 1998) have developed self-report measures of academic self-efficacy that can be used with a variety of students. In both the Motivated Strategies for Learning Questionnaire (MSLQ, Pintrich et al., 1993) and Patterns of Adaptive Learning Survey (PALS, Midgley et al., 1998), students respond to a series of statements by indicating how true the statement is for them. Items are typically rated using 5-point or 7-point Likert scales. These self-report measures are reliable for a broad range of students from fourth grade through college.

Although these measures were designed for research purposes, they can also be used by individual instructors to get a sense of students' efficacy beliefs in their classrooms. However, it is important to note that these measures are not norm-referenced assessments such as standardized intelligence or achievement tests. It is expected that students' responses differ depending on the context; therefore, norms should be established within a particular context or classroom. Furthermore, as noted earlier, motivation is context-specific. Therefore, teachers and school psychologists should think about the context in which efficacy is being assessed and adjust the items appropriately. For instance, if a teacher is interested in students' academic self-efficacy in math class, she or he should ask students questions about their feelings and beliefs in math, not about school in general.

Adaptive Attributions as Enablers of Success

Attribution theory, which focuses on attempts to understand why events occur, is another important line of research on achievement motivation (Graham & Weiner, 1996). Similar to other motivational theories, research on attributions did not focus initially on academic achievement. However, Weiner's (1985, 1986) research relating attributions to students' behaviors and success in academic settings has done much to further an understanding of how attributions relate to learning in school. Although much of Weiner's research was con-

ducted with college undergraduates, others such as Borkowski (e.g., Borkowski, Weyhing, & Carr, 1988) have applied attribution theory to elementary and secondary students.

Attribution theory suggests that when a failure or success occurs, such as failing a math exam or doing particularly well on an assignment, individuals will analyze the situation to determine the perceived causes for the failure or success (Weiner, 1986). These causes may be environmental factors, such as a distracting testing environment or bias on the part of the teacher, or personal factors, such as lack of knowledge, ability, or failure to prepare adequately for the exam. These perceived causes can be categorized into three causal dimensions: stability (how stable the perceived cause is), locus (whether the cause is internal or external), and controllability (whether or not the perceived cause can be controlled). Using these three causal dimensions, a specific cause can be categorized into one of eight cells. For instance, a student who fails an exam may say it is due to instructor bias (external, stable, controllable) or lack of ability (internal, stable, uncontrollable). According to attribution theory, it is the individual's focus on why success or failure occurred that explains specific psychological outcomes such as future expectancies, self-efficacy, and affect (Weiner, 1986). These psychological outcomes have been further linked to behavioral outcomes such as engagement and achievement.

In general, research on attributions suggests that for success it is adaptive to attribute the success to stable, internal factors such as ability, skill, or talent as these factors should also be present for future tasks (Weiner, 1986). Attributions to unstable but controllable internal factors such as effort are especially adaptive in that effort can be modified based on the demands of the situation. On the other hand, for failure, attributions to factors that are unstable are more adaptive. For instance, attributing failure to lack of effort (unstable, controllable, internal) not only allows the student to protect his or her self-worth, it also helps the student to see a way to avoid failure in the future (by exerting more effort). Attributing failure to bad luck (unstable, uncontrollable,

external) can also be adaptive because it means that the circumstances perceived to cause the failure may not be present in future situations.

Researchers who focus on children with learning disabilities or underachieving children find similar patterns of adaptive and maladaptive attributions; however, they further suggest that effort attributions be associated with strategy use (Carr, Borkowski, & Maxwell, 1991; Licht, 1983). That is, rather than attributing success to effort, success should be attributed to effortful strategy use. This may be especially important for children with learning disabilities in that effort may not always lead to success. Furthermore, rather than attributing failure to lack of effort alone, attributing failure to the lack of strategy use or use of inappropriate strategies helps dispel the inappropriate belief that effort always leads to success, but still helps to convey the idea that success is possible.

Although attribution theory does not suggest a direct link of adaptive attributions to academic achievement and other academic enablers, some indirect links can be made via other psychological processes. For instance, adaptive attributions are associated with higher expectancies for success, enhanced academic self-efficacy, and positive affect such as pride or hopefulness (Weiner, 1986). These psychological outcomes are in turn associated with engagement (persistence and choice) and study skills (via self-efficacy), as well as actual achievement. Carr et al. (1991) also suggested that attributions to external factors hinders the acquisition of strategies because external attributions provide little reason for children to learn strategies—suggesting that attributions are important for learning strategies.

Attribution theory is useful for school psychologists and practitioners in that individuals' beliefs about the causes of events can be changed through feedback and other environmental manipulations. In particular, teachers' reactions following success or failure can influence students' attributions suggesting that the teacher plays an important role in the types of attributions students make (Graham, 1984). For example, a teacher's expression of pity following failure makes it more likely that a stu-

dent will attribute the failure to low ability (internal, stable, uncontrollable).

In addition to teachers' reactions, teachers can influence students' attributions by providing feedback to students following success or failure (Licht, 1983; Pintrich & Schunk, 2002). In doing so, it is first important for teachers to assess whether success or failure has occurred for a particular student based on the student's judgments of success or failure. Following this, the teacher should consider the situation and help the student make adaptive but accurate attributions. For failure settings, it is useful for students to attribute the failure to unstable causes as this helps to ensure that there is a possibility for success in the future. For instance, it is often adaptive to attribute failure to lack of effort or inappropriate strategy use. If the failure was due to lack of appropriate strategy use, it is not useful to tell the student to try hard. Rather, the teacher may need to work with the student to help them develop the strategies and skills necessary to succeed in the future. For success, attributions to effort are also adaptive, especially if the student did indeed try hard. It is also adaptive to attribute success to appropriate strategy use as this helps to encourage the use of strategies in the future and is internal. However, success is also possible without great effort, so when appropriate, it is also adaptive to attribute success to talent or skill.

Research on attributions has used a variety of methodologies to assess students' attributions including experiments, think-aloud protocols, and analysis of written material (Pintrich & Schunk, 2002). Some of these methodologies could be adapted for informal assessment by instructors. For instance, rather than creating experimental situations and assessing students' attributions through think-aloud protocols or rating scales, teachers or school psychologists could talk informally with students about why they think they succeeded or failed in a specific situation. Based on these discussions, teachers would be able to develop a better understanding of the attributional responses of students in their classes and determine whether they should help certain students retrain their attributional responses to success and failure.

Intrinsic Motivation as Enabler of Success

The concept of intrinsic versus extrinsic motivation is certainly prevalent within social-cognitive models of motivation and is thus included in this review of motivation as an academic enabler. Intrinsic motivation is defined as motivation to engage in an activity for its own sake, whereas extrinsic motivation refers to motivation to engage in an activity as a means to an end (Pintrich & Schunk, 2002). Given the space constraints of this article, it is not possible to discuss all the various lines of research that fall under the heading of intrinsic motivation. Therefore, this section focuses on personal and situational interest. However, it should be noted that there are many other multidimensional perspectives of intrinsic motivation that deserve mention, such as Deci and Ryan's (e.g., Deci, 1980; Deci & Ryan, 1985, 1991) self-determination theory. In this theory, one of the defining features of intrinsic motivation is high personal interest in the task or activity. Readers are urged to explore these other aspects of intrinsic motivation. Sansone and Harackiewicz's (2000) edited book on intrinsic and extrinsic motivation is an excellent starting place.

As discussed earlier, interest reflects what most laypeople think of when they think of motivation. However, similar to other constructs in motivation, interest is also multidimensional and should not be thought of as simply liking or not liking a particular task or domain. For instance, whereas interest in general is defined as the interaction between the individual and his or her environment (Krapp, Hidi, & Renninger, 1992), interest theorists have distinguished between personal or individual interest and situational interest (Hidi, 1990; Hidi & Harackiewicz, 2000; Krapp et al., 1992).

Personal interest reflects an individual's interest in a particular topic or domain (Hidi & Harackiewicz, 2000). It is often measured by students' reports of how much they like or enjoy a particular activity or domain. Personal interest is thought to be somewhat stable over time and is partially a function of individuals'

preferences as well as aspects of the task (e.g., Malone & Lepper, 1987). In contrast, situational interest is based entirely on the features of the learning context and may be short term or long lasting (Hidi & Harackiewicz, 2000). For the most part, the researchers who have studied situational interest have been reading researchers who have focused on how different aspects of text can generate and sustain interest.

Building on this important work, Mitchell (1993) sought to further expand the notion of situational interest beyond the reading domain. He suggested that situational interest could be broken into two factors: catch and hold. Catch factors are thought to stimulate students (i.e., “catch” their attention; Mitchell, 1993). They include innovative or novel instructional techniques such as using an exciting computer program, having students learn course material by playing a game, or allowing students to work on a group project together. In contrast, hold factors are thought to empower students by making the content meaningful so students view the content as useful, or by encouraging students’ involvement in the task (Mitchell, 1993). For instance, emphasizing how a particular mathematics lesson is useful for bookkeeping or planning a budget may help to make the material more meaningful to students. Providing activities that encourage active student involvement such as small group work or discussions rather than lectures is also useful for promoting the hold factor of situational interest. Interest researchers have given increased attention to the hold factor as it seems to be a better predictor of continuing interest than the catch factor (Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000).

Both personal and situational interest have the potential to influence academic achievement and other academic enablers. For instance, personal interest is positively associated with achievement (see Krapp et al., 1992) as well as with the use of deeper cognitive strategies (Schiefele, 1991) for children and adults. As might be expected, personal interest is also associated with increased attention and persistence (Hidi & Harackiewicz, 2000). The relation of situational interest to

achievement and other academic enablers is similar. Situational interest can enhance achievement by engaging students in the task or activity. Furthermore, both the catch and hold components of situational interest should be associated with other academic enablers such as persistence and strategy use, at least for the time during which situational interest is activated (Pintrich & Schunk, 2002).

For teachers and school psychologists, these results suggest that academic achievement, study skills, and engagement can be increased by tapping into students’ interests. This can be done by building upon personal interest or creating situational interest. That is, allowing students to work on topics they find personally interesting may help them to engage in such a way that they use better strategies for learning and ultimately achieve at higher levels. One way to capitalize on personal interest is to allow students to pick topics for class projects or reports. Admittedly, it is difficult to design classroom activities that capitalize on the personal interest of all students in the classroom; therefore, educators should also consider ways to enhance situational interest.

Teachers trying to enhance situational interest should think about how to promote both catch and hold factors. For instance, when designing classroom activities, having an exciting experiment in science or using an innovative computer program in social studies may spark situational interest and engage students at that particular moment. This is useful for engaging students in a specific activity, but may not translate into interest in future activities. Therefore, teachers should also consider how to promote the hold factor of situational interest, such as trying to make the topic meaningful to students. This may be done by capitalizing on the utility of what is being learned (e.g., helping students see that the material is useful for things outside of school or for future goals).

In terms of assessment, measures of personal interest tend to be behavioral, such as continued engagement during free time or a few self-report items assessing liking or enjoyment (e.g., Barron & Harackiewicz, 2001). For situational interest, researchers are beginning to develop self-report measures of catch

and hold (e.g., Harackiewicz et al., 2000); however, these measures are still under development for college students and are not yet useful for elementary and secondary classroom educators. Teachers wishing to assess the degree of situational interest in their classes may want to observe informally students' reactions to different instructional techniques or talk with students about what aspects of the activities they find exciting or meaningful.

There are also more general measures of intrinsic and extrinsic motivation that may be useful to school psychologists and teachers. For instance, Harter (1981) developed a self-report scale of intrinsic versus extrinsic motivation in the classroom that can be used as part of a diagnostic battery to assess students' motivational orientation. This scale consists of five subscales; three scales assess motivational components (preference for challenge, curiosity/interest, mastery) and two scales assess cognitive-informational structures (independent judgment, internal criteria). The survey was designed to be used with upper elementary students and consists of a 4-point forced-choice format in which students must indicate whether they are similar to the intrinsically or extrinsically motivated students. Teachers who want to assess personal interest may find the third subscale (curiosity/interest) particularly useful. However, as this scale measures motivation at a global level, those using this scale may wish to consider making the items specific to a particular class or subject area.

Gottfried's (1985) Children's Academic Intrinsic Motivation Inventory (CAIMI) can also be used to measure children's intrinsic motivation. This self-report scale consists of five subscales. Four of those subscales measure intrinsic motivation separately for four topic areas (reading, math, social studies, science) and the fifth subscale assesses intrinsic motivation more generally. In contrast to Harter's (1981) scale, the CAIMI does not measure intrinsic versus extrinsic motivation. Rather, this scale assesses high versus low intrinsic motivation. As with other self-report measures, this scale can be used for upper elementary through college-aged students.

The MSLQ, developed by Pintrich and his colleagues (Pintrich et al., 1993) also includes intrinsic and extrinsic goal orientations and can be used to assess intrinsic and extrinsic motivation for junior high through college students. A task value scale, also included in the MSLQ, consists of interest, importance, and utility. Although task value is not the same as personal interest, it does contain a personal interest component. Therefore, this scale may be of use to educators who wish to assess students' interest in a particular topic area. Again, it is recommended that these scales be used to assess students' motivation in a particular context.

All of the self-report scales described thus far use students' reports of their intrinsic motivation. Although there are measures that use teacher ratings such as the Teacher Rating of Academic Achievement Motivation (TRAAM; Stinnett, Oehler-Stinnett, & Stout, 1991), we believe that the internal nature of intrinsic motivation (as well as the other motivational constructs discussed in this article) makes students' own self-reports more accurate assessments of their motivation. Thus, although teacher ratings may correlate with student ratings, the students' own ratings should provide more accurate descriptions of students' intrinsic motivation (Gottfried, 1985).

Adaptive Goal Orientations as Enablers of Success

The final perspective for motivation discussed in this article is achievement goal theory. Achievement goal theory is one of the most prominent theories within motivational research today (Pintrich & Schunk, 2002). Goal theory proposes that there are two general goal orientations that concern the purposes individuals are pursuing when approaching and engaging in a task. Achievement goal theorists have used a variety of labels to refer to these two goals including learning and performance goals (Dweck & Leggett, 1988), task and ability goals (Maehr & Midgley, 1996), task-involved and ego-involved (Nicholls, 1984), and mastery and performance goals (Ames, 1992; Elliot, 1997; Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Harackiewicz, Barron, &

Elliot, 1998). Although there are slight variations in the interpretation of these goals under these various labels, they will be referred to here as mastery and performance goals for simplicity. Mastery goals orient learners to “developing new skills, trying to understand their work, improving their level of competence, or achieving a sense of mastery based on self-referenced standards” (Ames, 1992, p. 262). In contrast, performance goals orient learners to focus on their ability and self-worth, to determine their ability by outperforming others in competitions, surpassing others in achievements or grades, and receiving public recognition for their superior performance (Ames, 1992).

In the literature on mastery and performance goals, the general theoretical assumption has been that mastery goals foster a host of adaptive motivational, cognitive, and achievement outcomes, whereas performance goals generate less adaptive or even maladaptive outcomes (Ames, 1992). Moreover, this assumption, particularly the adaptive mastery goal assumption, has been supported in a large number of empirical studies on goals and achievement processes (Ames, 1992; Dweck & Leggett, 1988; Pintrich, 2000c; Pintrich & Schunk, 2002). The logic of the argument is that when students are focused on trying to learn and understand the material and trying to improve their performance relative to their own past performance, this orientation will help them maintain their self-efficacy in the face of failure, ward off negative affect such as anxiety, lessen the probability that they will have distracting thoughts, and free up cognitive capacity, thus allowing for more cognitive engagement and achievement. In contrast, when students are concerned about trying to be the best, get higher grades than others, and do well compared to others under a performance goal, there is the possibility that this orientation will result in more negative affect or anxiety, increase the possibility of distracting and irrelevant thoughts (e.g., worrying about how others are doing rather than focusing on the task), and that this will diminish cognitive capacity, task engagement, and performance.

In our own empirical research at Michigan, we have found similar patterns in our data for mastery goals. That is, mastery goals have been positively related to cognitive strategy use and self-regulation as well as performance. These studies have shown that junior high students who report higher levels of mastery goals are more likely to use elaboration and organizational strategies as well as to be more metacognitive and regulating (Pintrich, 2000b; Pintrich & De Groot, 1990). The assumption that performance goals are maladaptive for all outcomes, however, has not been confirmed in our work with junior high school students (Pintrich, 2000b; Wolters et al., 1996) or the work of others with college students (e.g., Harackiewicz et al., 1998).

This changing perspective for performance goals stems in part from a change in the way performance goals are defined. In particular, achievement goal theorists have begun to distinguish between approach and avoidance performance goal orientations (Elliot & Harackiewicz, 1996; Middleton & Midgley, 1997). Performance-approach goals reflect a focus on trying to outperform others, whereas performance-avoid goals reflect a focus on trying to avoid looking incompetent in comparison to others. Based on this recent development, it seems clear that performance-avoid goals are related to maladaptive patterns of learning for middle school and college students (e.g., Elliot & Harackiewicz, 1996; Middleton & Midgley, 1997; Skaalvik, 1997). For performance-approach goals, the competitive urge or performance goal seems to be positively related to actual performance at least in terms of final course grade for college students (Harackiewicz et al., 1998). In addition, studies conducted with secondary and college students suggest that there is not necessarily a decrement in cognitive engagement or self-regulation as a function of adopting a performance goal (Pintrich, 2000b, 2000c). Finally, studies with students in junior high classrooms also have shown that students high in performance-approach goals and high in mastery goals are not more anxious, do not experience more negative affect, and are equally motivated as those low in performance-approach goals

and high in mastery goals (Pintrich, 2000b). This recent research is leading to some reconceptualization of the general theoretical assumption that mastery goals are adaptive and performance goals are maladaptive, but there is still a need for more research on the stability of these findings for performance-approach goals.

In summary, empirical evidence suggests that the adoption of mastery goals relates positively to school learning as well as other academic enablers such as study skills and engagement. For performance goals, the picture is less clear. There seems to be increasing evidence that performance-approach goals are linked to academic achievement, although there is less evidence to suggest that this link is due to an increase in study skills or engagement, at least when performance goals are adopted in isolation from mastery goals. In relating achievement goals to social enablers, preliminary evidence suggests that a number of social variables such as a sense of belonging in school, the endorsement of social responsibility goals (adhering to social norms or rules), a desire to be accepted by the peer group, and attempts to achieve social status help to predict the types of achievement goals students adopt (e.g., Anderman & Anderman, 1999). In particular, Anderman and Anderman found that students who felt a sense of belonging were more likely to adopt a mastery goal orientation and less likely to adopt a performance goal orientation. Furthermore, endorsing social responsibility goals positively predicted the adoption of mastery goals. In contrast, students who focused on developing social relationships and achieving social status were more likely to endorse performance goals.

A few instructional suggestions can be made based on the situated nature of achievement goals. That is, achievement goal theory suggests that differences in the way the classroom or school environment is perceived are linked to students' goal adoption (e.g., Maehr & Anderman, 1993; Roeser, Midgley, & Urdan, 1996; Urdan, Midgley, & Anderman, 1998). This has important implications for teachers, namely that teachers can shape the classroom environment to focus students on mastery, per-

formance, or both, and that this focus can then be linked to other academic enablers as well as subsequent achievement in school. In making suggestions for promoting mastery and performance goal adoption, the focus here will be on how to emphasize mastery goals. Although there is evidence suggesting that performance-approach goals may be adaptive for achievement, it is still unclear whether performance-approach goals are adaptive for all students in all contexts, especially when mastery goals are not also adopted (Midgley, Kaplan, & Middleton, 2001). Furthermore, many typical classroom contexts, especially at the secondary and college levels, tend to emphasize performance goals. Therefore, the following suggestions for instruction focus on promoting mastery goal adoption.

A number of achievement goal theorists have stressed how various structures in the classroom environment may influence students' perceptions of the classroom goal structure, which in turn is thought to relate to students' own adoption of mastery versus performance goals (e.g., Ames, 1992; Blumenfeld, 1992; Meece, 1991). Classroom structure refers to the way the teacher establishes routines, sets up rules, assigns tasks, and evaluates students. The classroom structure is often categorized along the dimensions of task, authority, and recognition or evaluation structures and these structures can be altered in classrooms to promote either a mastery or performance orientation (e.g., Ames, 1992; Blumenfeld, 1992; Maehr & Anderman, 1993; Maehr & Midgley, 1991, 1996; Meece, 1991).

The types of tasks used in the classroom can convey very different messages to students regarding the general goal structure of the classroom. To encourage mastery goal adoption, Ames (1992) recommends using tasks that are meaningful and appropriately challenging. For instance, rather than having students complete a series of worksheets, having students engage in hands-on, applied activities in math and science can help to challenge students and help them see how what they are learning in school relates to things outside of school. Furthermore, using a variety of tasks not

only allows students to choose among tasks they find personally interesting but also helps to decrease the opportunity for social comparison. The authority structure of the classroom also sends important messages regarding the achievement goal-orientation of the classroom. By allowing students to have autonomy in the classroom and reducing the authority of the teacher, mastery goals can be promoted (Ames, 1992). For instance, giving students a set of assignments and allowing them to choose the order in which they will complete them helps to grant autonomy to the students and thus encourage mastery. Evaluation and recognition are often quite salient to students and play a large role in setting the “tone” of the classroom as emphasizing mastery or performance. To foster mastery goal adoption, evaluation should focus on individual improvement as well as mastery of ideas. For instance, evaluating students on their improvement over several drafts of a written assignment can help to focus students on learning rather than on performing better than others. In addition, private rather than public recognition of students’ efforts and improvement helps to promote a mastery-oriented learning environment.

To assess achievement goals, it is important to consider students’ personal goal orientations as well as the classroom or school goal structure. One assessment that has been used in a variety of cultures and age ranges is PALS, which was developed by Midgley and her colleagues (Midgley et al., 1998). As noted earlier, PALS is a self-report questionnaire that can be administered to students from fourth grade through college. To assess individual achievement goals, students respond to a series of questions about their orientations towards achievement situations. As these orientations are thought to be situation-specific, it is recommended that the items ask students to focus on a particular context or subject area such as math class. The classroom goal structure can be assessed through self-reports from students (i.e., what students think is emphasized in the classroom) as well as teacher’s self-reports of their instructional practices. Although these measures were designed for the purposes of classroom research, educators in-

terested in assessing the goal orientations of their own students or students’ perceptions of the classroom can administer PALS to students in their own class or school. This might be particularly useful if one is interested in seeing if students perceive changes to the classroom or school goal structure. However, it is important to note that reports of mastery goals and mastery goal structures tend to be high, making it more difficult to detect changes in the classroom or school goal structure based on reform efforts.

Future Directions and Limitations

Although a great deal of research has already been conducted on students’ motivation in academic settings (elementary through college), there is a clear need for additional research. This last section focuses on four areas for future research. First, although the current theories of motivation are social cognitive and emphasize both individual and contextual influences, much of the research within achievement motivation has focused on motivation at the individual level. Educational researchers are urged to further examine how specific features of the classroom environment might affect a variety of aspects of students’ motivation. In doing so, researchers need to move beyond self-report measures of motivation and consider other methodologies such as classroom observations. For instance, a number of achievement goal theorists (e.g., Patrick, Anderman, Ryan, Edelin, & Midgley, 2001; Turner et al., 2002) have used classroom observations to enhance or supplement self-report data and this certainly seems to be providing richer descriptions of how motivation plays out in classroom contexts.

A second related direction for future research is the use of intervention studies. That is, if the context plays a central role as suggested by the theories discussed in this article, it should be possible to design intervention studies to promote the development of adaptive motivational beliefs such as increased self-efficacy; attributions to internal, controllable factors; interest in academic tasks; and mastery-goal orientations. However, much of the research within the field of achievement moti-

vation is correlational or conducted in lab-like experimental contexts that do not reflect typical learning environments. Educational researchers need to collaborate with teachers and administrators to implement the suggested changes to the context and evaluate the effectiveness of these changes. Although this is certainly a large task and, based on reports of those who have attempted this (e.g., Maehr & Midgley, 1996; Midgley & Maehr, 1999), does not always provide the type of empirical data one may desire, it is essential that these theories of motivation are directly applied to students' learning.

A third direction for future research is more careful study of how motivational processes may differ for various ethnic groups. Much of the initial research on motivation was based on Caucasian college students, and motivational researchers have made efforts to extend and test various motivational theories for elementary and secondary students with different ethnic and cultural backgrounds (Graham, 1994; Zusho & Pintrich, in press). However, there is a need to continue this type of research and to expand it to more carefully consider whether motivational processes differ for students from varied cultural backgrounds. The key issue in this type of research is not general comparisons of the different groups in terms of mean-level differences, but rather that the relations among the motivational constructs and other outcomes of academic success such as engagement, self-regulation, study skills, and achievement are similar within the groups. If the relations are similar, then the motivational models and constructs are proving useful in understanding the groups' motivation and achievement. If the relations are not similar, the models may need to be changed or supplemented with other constructs.

Finally, at a more theoretical level, social cognitive models of motivation have tended to weigh heavily on cognition. Thus, although motivation and affect have been linked historically, many current social cognitive theories downplay the role of affect or emotions. It is hoped that future motivational researchers will expand these social cognitive

models to consider affective processes (Linnenbrink & Pintrich, 2002). Although emotions are central to attribution theory, and research certainly considers both the affective and value components of interest, it is anticipated that other, more cognitive, motivational constructs such as achievement goals and self-efficacy will expand to include emotions as well as cognitions in their understanding of motivation. Considering the role of affective processes in motivational theories should aid in the development of more nuanced and accurate models of motivational processes in school. The inclusion of affective processes also may be particularly important for students who are having serious problems in school (e.g., those with learning disabilities or more severe emotional and behavioral adjustment problems).

Conclusion

This article has focused on four key components of student motivation. Based on research on these four components, suggestions have been offered regarding what teachers and school psychologists can do to promote students' motivation and several motivational assessments such as PALS (Midgley et al., 1998) and the MSLQ (Pintrich et al., 1993) have been suggested. These suggestions are based on the multidimensional view of motivation as well as the idea that motivation is not a stable trait but reflects an interaction between the context and what the student brings to the context. Accordingly, it is inappropriate to label students as "motivated" or "unmotivated"; rather, school psychologists and other educators are urged to consider ways in which the learning environment can be altered to enhance all students' motivation based on a variety of motivational constructs including academic self-efficacy, attributions, intrinsic motivation, and achievement goals. Although there is certainly a need for additional research on how specific changes to the classroom context influence multiple aspects of students' motivation in school, it is clear from what is known that the context shapes students' motivation, engagement, strategy use, and achieve-

ment. Therefore, teachers and school psychologists are urged to focus on changes that can be made to the school or classroom environments to help all students, rather than citing lack of motivation for a particular student as a reason for lower than expected academic performance.

References

- Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology, 84*, 261-271.
- Anderman, E. M., & Anderman, L. H. (1999). Social predictors of changes in students' achievement goal orientations. *Contemporary Educational Psychology, 25*, 21-37.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Barron, K. E., & Harackiewicz, J. M. (2001). Achievement goals and optimal motivation: Testing multiple goal models. *Journal of Personality and Social Psychology, 80*, 706-722.
- Blumenfeld, P. (1992). Classroom learning and motivation: Clarifying and expanding goal theory. *Journal of Educational Psychology, 84*, 272-281.
- Bong, M. (2001). Between- and within-domain relations of academic motivation among middle and high school students: Self-efficacy, task value, and achievement goals. *Journal of Educational Psychology, 93*, 23-34.
- Borkowski, J. G., Weyhing, R. S., & Carr, M. (1988). Effects of attributional retraining on strategy-based reading comprehension in learning-disabled students. *Journal of Educational Psychology, 80*, 46-53.
- Carr, M., Borkowski, J. G., & Maxwell, S. E. (1991). Motivational components of underachievement. *Developmental Psychology, 27*, 108-118.
- Deci, E. L. (1980). *The psychology of self-determination*. Lexington, MA: D. C. Heath.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. In R. A. Dienstbier (Ed.), *Nebraska symposium on motivation 1990* (Vol. 38, pp. 237-288). Lincoln, NE: University of Nebraska Press.
- Dweck, C., & Leggett, E. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95*, 256-273.
- Eccles, J., Wigfield, A., & Schiefele, U. (1998). Motivation to succeed. In W. Damon (Series Ed.) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (5th ed., pp. 1017-1095). New York: Wiley.
- Elliot, A. (1997). Integrating the "classic" and "contemporary" approaches to achievement motivation: A hierarchical model of approach and avoidance achievement motivation. In M. L. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 10, pp. 143-179). Greenwich, CT: JAI Press.
- 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. (1996). Approach and avoidance achievement goals and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology, 70*, 461-475.
- Gottfried, A. E. (1985). Academic intrinsic motivation in elementary and junior high school students. *Journal of Educational Psychology, 77*, 631-645.
- Graham, S. (1984). Communicating sympathy and anger to black and white students: The cognitive (attributional) consequences of affective cues. *Journal of Personality and Social Psychology, 47*, 40-54.
- Graham, S. (1994). Motivation in African Americans. *Review of Educational Research, 64*, 55-117.
- Graham, S., & Weiner, B. (1996). Theories and principles of motivation. In D. C. Berliner & R. Calfee (Eds.), *Handbook of educational psychology* (pp. 63-84). New York: Macmillan.
- Harackiewicz, J. M., Barron, K. E., & Elliot, A. J. (1998). Rethinking achievement goals: When are they adaptive for college students and why? *Educational Psychologist, 33*, 1-21.
- Harackiewicz, J. M., Barron, K. E., Tauer, J. M., Carter, S. M., & Elliot, A. J. (2000). Short-term and long-term consequences of achievement goals: Predicting interest and performance over time. *Journal of Educational Psychology, 92*, 316-330.
- Harter, S. (1981). A new self-report scale of intrinsic versus extrinsic orientation in the classroom: Motivational and informational components. *Developmental Psychology, 17*, 300-312.
- Hidi, S. (1990). Interest and its contribution as a mental resource for learning. *Review of Educational Research, 60*, 549-571.
- Hidi, S., & Harackiewicz, J. M. (2000). Motivating the academically unmotivated: A critical issue for the 21st century. *Review of Educational Research, 70*, 151-179.
- Krapp, A., Hidi, S., & Renninger, K. A. (1992). Interest, learning, and development. In K. A. Renninger, S. Hidi, & A. Krapp (Eds.), *The role of interest in learning and development* (pp. 3-25). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Licht, B. G. (1983). Cognitive-motivational factors that contribute to the achievement of learning-disabled children. *Journal of Learning Disabilities, 16*, 483-490.
- Linnenbrink, E. A., & Pintrich, P. R. (2002). Achievement goal theory and affect: An asymmetrical bidirectional model. *Educational Psychologist, 37*, 69-78.
- Maehr, M. L., & Anderman, E. (1993). Reinventing schools for early adolescents: Emphasizing task goals. *Elementary School Journal, 93*, 593-610.
- Maehr, M. L., & Midgley, C. (1991). Enhancing student motivation: A schoolwide approach. *Educational Psychologist, 26*, 399-427.
- Maehr, M. L., & Midgley, C. (1996). *Transforming school cultures*. Boulder, CO: Westview Press.
- Malone, T. W., & Lepper, M. R. (1987). Making learning fun: A taxonomy of intrinsic motivations from learning. In R. E. Snow & M. J. Farr (Eds.), *Aptitude, learning, and instruction: Vol 3: Cognitive and affective pro-*

- cess analysis (pp. 223-253). Hillsdale, NJ: Lawrence Erlbaum.
- Meece, J. L. (1991). The classroom context and students' motivational goals. In M. L. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 7, pp. 261-286). Greenwich, CT: JAI Press.
- Middleton, M., & Midgley, C. (1997). Avoiding the demonstration of lack of ability: An under-explored aspect of goal theory. *Journal of Educational Psychology, 89*, 710-718.
- Midgley, C., Kaplan, A., & Middleton, M. (2001). Performance-approach goals: Good for what, for whom, under what circumstances, and at what cost? *Journal of Educational Psychology, 93*, 77-86.
- Midgley, C., Kaplan, A., Middleton, M., Maehr, M. L., Urdan, T., Anderman, L. H., Anderman, E., & Roeser, R. (1998). The development and validation of scales assessing students' achievement goal orientations. *Contemporary Educational Psychology, 23*, 113-131.
- Midgley, C., & Maehr, M. L. (1999). Using motivational theory to guide school reform. In A. J. Reynolds, H. J. Walberg, & R. P. Weissberg (Eds.), *Promoting positive outcomes: Issues in children's and families' lives* (pp. 129-159). Washington, DC: CWLA Press/Child Welfare League of America.
- Mitchell, M. (1993). Situational interest: Its multifaceted structure in the secondary school mathematics classroom. *Journal of Educational Psychology, 85*, 424-436.
- Nicholls, J. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review, 91*, 328-346.
- Patrick, H., Anderman, L. H., Ryan, A. M., Edelin, K. C., & Midgley, C. (2001). Teachers' communication of goal orientations in four fifth-grade classrooms. *Elementary School Journal, 102*, 35-58.
- Patrick, H., Hicks, L., & Ryan, A. M. (1997). Relations of perceived social efficacy and social goal pursuit to self-efficacy for academic work. *Journal of Early Adolescence, 17*, 109-128.
- Pintrich, P. R. (2000a). An achievement goal theory perspective on issues in motivation terminology, theory, and research. *Contemporary 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.
- Pintrich, P. R. (2000c). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation: Theory, research and applications* (pp. 451-502). San Diego, CA: Academic Press.
- Pintrich, P. R., & De Groot, E. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology, 82*, 33-40.
- Pintrich, P. R., & Schunk, D. (2002). *Motivation in education: Theory, research, and applications* (2nd ed.). Upper Saddle, NJ: Prentice-Hall, Inc.
- Pintrich, P. R., Smith, D., Garcia, T., & McKeachie, W. (1993). Predictive validity and reliability of the Motivated Strategies for Learning Questionnaire (MSLQ). *Educational and Psychological Measurement, 53*, 801-813.
- Roeser, R., Midgley, C., & Urdan, T. (1996). Perceptions of the school psychological environment and early adolescents' psychological and behavioral functioning in school: The mediating role of goals and belonging. *Journal of Educational Psychology, 88*, 408-422.
- Sansone, C., & Harackiewicz, J. M. (Eds.). (2000). *Intrinsic and extrinsic motivation: The search for optimal motivation and performance*. San Diego: Academic Press.
- Schiefele, U. (1991). Interest, learning, and motivation. *Educational Psychologist, 26*, 299-323.
- Schunk, D. H. (1989a). Self-efficacy and achievement behaviors. *Educational Psychology Review, 1*, 173-208.
- Schunk, D. H. (1989b). Self-efficacy and cognitive skill learning. In C. Ames & R. Ames (Eds.), *Research on motivation in education* (Vol. 3, pp. 13-44). San Diego: Academic Press.
- Schunk, D. H. (1991). Self-efficacy and academic motivation. *Educational Psychologist, 26*, 207-231.
- Skaalvik, E. M. (1997). Self-enhancing and self-defeating ego orientation: Relations with task and avoidance orientation, achievement, self-perceptions, and anxiety. *Journal of Educational Psychology, 89*, 71-81.
- Stinnett, T. A., Oehler-Stinnett, J., & Stout, L. J. (1991). Development of the teacher rating of academic achievement motivation: TRAAM. *School Psychology Review, 20*, 609-622.
- Turner, J. C., Midgley, C., Meyer, D. K., Gheen, M., Anderman, E. M., Kang, Y., & Patrick, H. (2002). The classroom environment and students' reports of avoidance strategies in mathematics: A multimethod study. *Journal of Educational Psychology, 94*, 88-106.
- Urdan, T. C., Midgley, C., & Anderman, E. M. (1998). The role of classroom goal structure in students' use of self-handicapping. *American Educational Research Journal, 35*, 101-122.
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review, 92*, 548-573.
- Weiner, B. (1986). *An attributional theory of motivation and emotion*. New York: Springer-Verlag.
- Wolters, C., Yu, S., & Pintrich, P. (1996). The relation between goal orientation and students' motivational beliefs and self-regulated learning. *Learning and Individual Differences, 8*, 211-238.
- Zusho, A., & Pintrich, P. R. (in press). A process-oriented approach to culture: Theoretical and methodological issues in the study of culture and motivation. In F. Salili & R. Hoosain (Eds.), *Research in multicultural education and international perspectives: Vol. 3. Teaching, learning and student motivation in a multicultural context*.

Elizabeth A. Linnenbrink received her Ph. D. in Education and Psychology from the University of Michigan, Ann Arbor in 2002. She is an Assistant Professor of Educational Psychology in Foundations of Education at the University of Toledo. Her research focuses on the way achievement motivation is linked to cognitive processing and emotional well-being in school contexts.

Paul R. Pintrich received his Ph.D. in Education and Psychology from the University of Michigan, Ann Arbor in 1982. He is a Professor of Education and Psychology and Chair of the Combined Program in Education and Psychology at the University of Michigan, Ann Arbor. His research focuses on the development of motivation and self-regulated learning.