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CHAPTER 17

Competence Motivation in the Classroom

Most prominent approaches to the study of motivation today involve competence in some way, whether it is the desire to become competent, to appear competent to others, to feel competent, or even to avoid feeling or appearing incompetent. In addition, most current conceptualizations of competence motivation were either created by psychologists or derived from earlier theories that were developed by psychologists (e.g., McClelland, Atkinson, White, Lewin). Pintrich (2004) recently argued that motivational science represents "use-inspired basic research" (p. 668). As such, a number of researchers have suggested that each of the various frameworks of motivation has direct implications for classroom practice despite the fact that most of these approaches were developed by psychologists and tested outside of classroom contexts. Our purpose in this chapter is to review the suggested implications for classroom practice of research from various motivational perspectives, to analyze the research evidence supporting these suggested implications, to offer a synthesis across motivational approaches of the best practices for pr0moting competence motivation in classrooms, to discuss some cautions that motivation researchers should attend to when trying to apply motivation principles in classrooms, and to suggest future directions for research.

DISTINGUISHING COMPETENCE MOTIVATION FROM OTHER CLASSROOM APPROACHES TO MOTIVATION

Competence motivation is distinct from other motivational theories and perspectives that have been examined and applied in the classroom. By definition, competence motivation involves a concern with mastery. The motive, or the impetus for action in a specific direction, is to develop, to attain, or to demonstrate competence. Although the fundamental objective of education is to create competence, a number of efforts to enhance student motivation in classrooms have not focused on competence motivation per se. For example, efforts to enhance students' self-esteem were primarily focused on increasing student motivation, but competence was not the central feature of these efforts. Similarly, token economies and other tangible reward systems are adopted to enhance motivation, but the motivation is often for behaving well, completing classwork, and being punctual rather than for developing competence. There has also been a considerable amount of attention paid to social motivators in schools and classrooms (Coleman, 1961; Ryan, 2001). Research in classrooms has revealed that student engagement and willingness to exert effort on academic tasks can be enhanced by social motives, such as the desire to work with friends and peers (Ryan, 2001), to please parents (Fuligni, 1997), and to please the teacher (Wentzel, 1999). In addition, research has shown that other social factors, such as perceptions of the teachers' social support (Wentzel, 1999), are positively associated with motivation in the classroom. Although none of these social variables and motives represents competence motivation, they may affect competence motivation indirectly by encouraging students to develop and then demonstrate academic competence to parents, peers, or teachers.

Because this volume is devoted to a consideration of competence motivation, we thought it important to define competence motivation in the classroom by distinguishing it from other forms of motivation. In addition, we wanted to foreshadow an argument that we present later in the chapter: A full understanding of the nature of competence motivation in classrooms may need to consider additional motivational factors, including the affordances and demands specific to classrooms, and the highly social nature of classroom interactions. We now turn our 'attention to a consideration of several prominent theories of competence motivation and the suggested implications of each for classroom practice.

OVERVIEW OF MOTIVATIONAL RESEARCH AND SUGGESTED CLASSROOM APPLICATIONS

In this section, we examine the stated implications for classroom practice of several prominent social cognitive conceptualizations of motivation (achievement goals, interest and intrinsic motivation, self-efficacy, expectancy-value theory, self-determination theory, and attribution theory) as they relate to competence, and review the empirical support for these stated implications. We should note that our attention is limited to research conducted in K-12 settings. Although there has be en research conducted in college classrooms (e.g., Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000), it is not

clear whether the results of that research generalize to K-12 settings for a variety of reasons. First, college attendance is voluntary whereas most K-12 attendance is coerced. Coercion has serious implications for competence motivation, particularly for theories that include intrinsic motivation. Second, college students, on average, are higher achieving than K-12 students. As such, these students generally fare well in situations involving comparisons of ability and academic competition, which may have implications for the generalizability of results involving the benefits of performance-approach goals (Midgley, Kaplan, & Middleton, 2001). In addition, college students are more likely to be in large classes that involve little personal interaction with the instructor, a fact that may alter the social influences on competence motivation. For these and other reasons (i.e., college students are older, more likely to be enrolled in classes that interest them, etc.), we limit our focus to K-12 settings.

Research on Achievement Goals

Perhaps more than any of the other research programs we discuss, research on achievement goals has been conducted with an eye toward classroom application. This motivational framework posits that individuals have different purposes for engaging (or not engaging) in activities, and these purposes are called goals or goal orientations (Dweck, 1992; Elliot, 1997; Maher & Midgley, 1991). Three types of achievement goals have been most extensively studied: mastery, performance-approach, and performance. Whereas performance goals involve a concern with normative performance and appearing able (or avoiding appearing unable), mastery goals represent a concern with developing competence by developing skills and understanding new information. The personal achievement goals that students adopt in a given situation or classroom are believed to be influenced by the goal messages made salient in the achievement context (Ames, 1992). These messages create the classroom goal structure. Unlike research on personal goals, the published research on classroom goal structures has generally focused on performance and mastery goal structures, without distinguishing between the approach and avoidance elements (Urdan, 2004).

Stated Implications of Achievement Goal Research

Because mastery goals are more consistently associated with positive motivational and learning outcomes (e.g., increased effort, persistence, positive affect, greater use of elaborative cognitive strategies, attributions of success and failure to controllable factors), goal theorists have often argued that the mastery goal structure should be strengthened in the classroom (Ames, 1992; Maher & Midgley, 1991; Midgley & Urdan, 1992). Goal researchers have suggested a number of strategies teachers could adopt to create stronger mastery goal structures in their classrooms. Ames (1992) suggested that teachers create academic tasks that are meaningful and personally relevant to students, evaluate students on the basis of improvement and effort rather than relative performance among students, and provide students with a sense of autonomy by giving them choices and a voice in classroom decisions whenever possible. A specific set of suggestions for creating a mastery goal structure in the classroom was offered by Midgley and Urdan (1992), and included recommendations such as making student evaluation and recognition practices as private as possible, emphasizing understanding and challenge, and using cooperative learning.

Empirical Support for the Stated Implications

Research examining classroom goal structures and their effects can be divided into three types: Active manipulations of teacher and classroom practices, survey research, and observational research, or survey observation combinations. Tue first report of an attempt to manipulate the goals that teachers emphasized in their classrooms was by Ames (1990). In an unpublished study, Ames worked with a group of 66 elementary school teachers, 36 of whom were randomly assigned to a treatment group and 30 others who were assigned to the control group. Teachers in the treatment group implemented a series of mastery-oriented practices in an effort to create mastery goal structures in their classrooms. Students in the treatment classrooms reported no change in their learning strategy use; intrinsic motivation; attitudes toward reading, math, and school; or perceived competence and increases in self-concept of ability; whereas students in the control classrooms reported significant declines in all of these variables except for attitude toward school and self-concept of ability. The second reported goal manipulation effort was from Anderman, Maher, and Midgley (1999). Analyzing data collected during the Coalition Project described by Maher and Midgley (1996), they found that when students moved from the last year of elementary school (5th grade) into the treatment middle sch90l (where efforts were under way to create a mastery goal structure), they reported a slight decrease in personal performance-approach goals, whereas students entering the control middle school reported an increase in performance approach goals. Students moving into control and

treatment schools did not differ in their own mastery goal orientations or perceptions of the mastery goal structure in their classrooms.

A number of survey studies have examined the associations between student (and sometimes teacher) reports of the goal structure in the classroom and motivational, affective, and achievement outcomes. The logic of this research has been that if student and teacher reports of the mastery and performance goal structure are related to valued outcomes, such as efficacy or self-regulation, then there is support for teacher attempts to emphasize mastery goal structures and, perhaps, deemphasize performance goal structures (see Urdan, 2004, for a review). Survey measures have typically asked students about their teachers' practices that reflect mastery goals or performance goals. Mastery goal practices include encouraging students to understand the material, viewing mistakes as part of the learning process, and recognizing students for trying hard, whereas performance goal practices include making it obvious which students in the class are doing well and encouraging students to compare their performances with each other (Midgley et al., 2000). Most of this research has revealed that when students perceive a stronger emphasis on mastery goals in the classroom, they are more likely to adopt personal mastery goal orientations (Anderman & Anderman, 1999: Urdan & Midgley, 2003). Across the transition from elementary to middle school, a decline in the perceived classroom mastery goal structure has particularly negative associations with achievement. personal mastery goal pursuit, self-efficacy, and positive affect in school (Urdan & Midgley, 2003). A perceived mastery goal structure is negatively associated with avoidance behaviors, such as avoidance of help seeking, avoidance of novelty, and self-handicapping (Turner et al., 2002). These avoidance behaviors undermine the development of competence and indicate diminished competence motivation.

A limited number of observational studies have also been conducted to identify specific instructional policies and practices that might explain differences among students in their perceptions of classroom goal structures. Meece (1991)'found that teachers in classrooms containing students with relatively high personal mastery goal orientations tended to use activities with clearer procedures than did teachers in classrooms containing less mastery-oriented students. Urdan, Kneisel, and Mason (1999) found that the teacher with the most consistent messages of concern for student input and personal relevance of the material had students who perceived the most mastery goal messages in the classroom and most frequently mentioned pursuing mastery goals themselves. Anderman, Patrick, Hruda, and Linnenbrink (2002) found that teachers in classrooms in which students perceived a relatively weak classroom mastery goal structure tended to emphasize the importance of following rules and procedures more than did teachers in classrooms with a stronger perceived mastery goal structure. Turner et al. (2002) discovered that greater motivational, emotional, and social support for learning during instruction was related to students' perceptions of high mastery classrooms and their reports of low avoidance strategies. Similarly, Stipek, Givvin, Salmon, and MacGyvers (1998) found that teachers who emphasized learning, understanding, and effort, as well as positive affect, had students who reported higher mastery goals, more positive emotions, more enthusiasm, and higher conceptual scores in mathematics than students in other groups.

To summarize, achievement goal research has consistently found that a strong emphasis on mastery goals in the classroom is associated with stronger personal endorsement of mastery goals by students, more positive affect, higher achievement, greater feelings of competence, and les s engagement in avoidance behaviors. Active manipulations, survey studies, and observational research have all indicated that when teachers emphasize the relevance of academic work, the importance of effort and personal growth, and are consistent in their mastery goal message, students, on average, are more likely to endorse mastery goals themselves.

Research has also revealed that an emphasis on performance goals in the classroom is related to some detrimental motivational and behavioral variables, such as greater personal performance-avoidance goal pursuit and increased use of self-handicapping (Urdan, Midgley, & Anderman, 1998). Research has often found weaker effects of classroom performance goal structures than of mastery goal structures (Urdan & Midgley, 2003), and goal researchers have more consistently emphasized the importance of strengthening mastery goal structures than of weakening performance goal structures in the classroom (e.g., Ames, 1992). Although important questions remain about how to interpret the research on classroom goal structures (Urdan, 2004), the existing evidence suggests that when teachers emphasize meaning and individual development in the classroom, students' competence motivation is enhanced.

Interest and Intrinsic Motivation

Interest is a potentially important component of competence motivation. Some have argued that human beings have an innate sense of curiosity that leads us, even from infancy, to become interested in novel, moderately challenging, dissonance-creating stimuli (White, 1959). Recent interest research has carefully distinguished between individual and situational interest (Renninger, 2000). Individual interest refers to the more stable personal disposition toward a specific topic or domain. Situational interest represents a more short-lived, situation-specific attention to a topic (Hidi & Harackiewicz, 2000).

Interest may be conceptualized as a component of intrinsic motivation (Hidi, 2000). Intrinsic motivation involves motivation that is free of extrinsic coercion. When intrinsically motivated, individuals engage in activities for the sake of the activity itself (Sansone & Harackiewicz, 2000). Intrinsic motivation may have a variety of sources, including needs for competence (Deci & Ryan, 1985; White, 1959), interest in the material or activity (Renninger, 2000), or perceptions of autonomy (Deci & Ryan, 1985).

Stated Implications of Interest and Intrinsic Motivation Research

Because individual interest is, by definition, idiosyncratic, it would simply be too onerous for classroom teachers to identify the individual interests of all of their students and tailor instruction to the variety of individual interests in a given classroom (Hidi & Harackiewicz, 2000). Rather, teachers should try to "catch" and then "hold" students' situational interest by manipulating the learning environment in a manner that enhances situational interest. A number of suggestions for how to do this include using humor; adding elements of fantasy and variety into the tasks; taking advantage of the social desires of students by having them work together; using puzzles and games; and choosing content that is likely to appeal to most students in the classroom, such as a unit on dinosaurs for a third-grade class (Bergin, 1999; Malone & Lepper, 1987; Pintrich, 2004). Teachers are also encouraged to model their own interest in the material and to pro vide examples of people who have pursued their interest in a topic. Intrinsic motivation research offers very similar suggestions for practice. Additional suggestions for fostering intrinsic motivation in the classroom include offering moderately challenging tasks to students and contextualizing academic material by linking it to students' personal lives and interests (Malone & Lepper, 1987). Because intrinsic motivation approaches often include the supposition that individuals are naturally inclined toward developing competence and making sense of their environments, some interest researchers suggest that promoting students' perceptions of autonomy (Ryan & Grolnick, 1986) and emphasizing mastery goals will promote intrinsic motivation in the classroom.

Empirical Support for the Stated Implications

Although a number of studies of interest and intrinsic motivation have been conducted with school-age children, very few have occurred within the natural setting of classrooms. Harter (1982) demonstrated that school-age children distinguish between perceived competence in various domains (cognitive, social, and physical), and that competence is related to intrinsic motivation. Others have also demonstrated an association between intrinsic motivation and perceived competence among children (Boggiano, Main, & Katz, 1988). Research has also demonstrated a link between appropriate challenge and intrinsic motivation (Harter, 1978). What is missing from this research is a direct link to classroom practices (Pintrich, 2004). Although Harter (1978) argued that adult caregivers are important socializing agents of mastery motivation, and Bandura (1986) demonstrated that models and reinforcement influence children's internalization of mastery goals, research conducted in classrooms to determine how teachers affect students' intrinsic motivation is scarce.

Self- Efficacy

Self-efficacy refers to individuals' judgments of their capabilities to perform specific tasks in specific situations (Bandura, 1986; Pajares, 1996). Students are more likely to engage and persist in an activity, and they exert more effort during the activity, when they believe they are able to succeed at the activity. Efficacy beliefs can be as powerful a predictor of achievement as measures of cognitive ability (Pajares & Kranzler, 1995). Of course, because self-efficacy judgments require some consideration of the skills one possesses, ability and efficacy judgments are usually highly correlated.

Bandura (1986) argued that self-efficacy judgments are created from four different sources: (1) experience (i.e., success or failure on similar tasks); (2) vicarious experience, such as observing the

success or failure of models, particularly similar models; (3) verbal persuasion, particularly from a respected or otherwise credible source; and (4) physical cues, such as sweating and shortness of breath upon seeing the difficulty of questions on an exam. These four sources of efficacy form the basis for the educational implications of efficacy research.

Stated Implications of Self-Efficacy Research

Teachers can influence their students' efficacy by attending to both the definition and sources of efficacy judgments. Because self-efficacy is, by definition, task- or activity-specific, teachers can encourage students to think about the specific skills they have and need to complete a given task rather than to make global judgments about their competence. Even. Students who think of themselves as poor at math can be encouraged to have high confidence about their ability to succeed at a specific math activity for which they possess the requisite skills. Schunk and Miller (2002) listed several specific strategies that teachers might employ to enhance their students' feelings of self-efficacy. These include helping students set proximal and specific learning goals; specifically teaching students how and when to use various learning strategies; providing students with opportunities to witness models completing the same or similar tasks, particularly models who are similar to students in age or ability; offering students feedback about their performance that focuses on the students' use of specific strategies (e.g., "You did a good job remembering to borrow from the hundreds column on that subtraction problem") rather than general feedback (e.g., "Nice job"); and judiciously using rewards based on performance.

Empirical Support for the Stated Implications

Most of the research examining self-efficacy has not examined educational processes within K-12 classrooms. Therefore, most of the empirical support for the stated implications of self-efficacy research must be inferred from research conducted outside of classrooms. Much of this research was conducted by Schunk and his colleagues in the 1980s (e.g., Schunk, 1984; Schunk, Hanson, & Cox, 1987). All of these studies were experiments rather than classroom-based examinations of students' responses to their teachers' instructional practices. An experimenter typically offered some form of instruction to students individually, and the effects of these instructions on self-efficacy were examined. The research suggests that self-efficacy is enhanced when students observe successful models, develop and pursue proximal goals, and learn how to use (and vocalize the use of) effective self-regulatory strategies.

A number of survey studies have also assessed the associations between self-efficacy and certain motivational and achievement variables among K-12 students in their regular classrooms. Some of these have used authentic tasks (e.g., teacher-designed tests that were counted as part of the students' grades in the class) as the criterion tasks on which self-efficacy judgments were based (Pajares, Miller, & Johnson, 1999; Shell, Colvin, & Bruning, 1995). Although these studies revealed that self-efficacy judgments were strong predictors of achievement in the classroom, they did not examine teacher behaviors or classroom processes that might influence students' self-efficacy judgments. It is difficult to determine whether the stated implications of the experimental and correlational research apply to the question of how competence motivation might be enhanced by increasing self-efficacy in the classroom.

Expectancy- Value Theory

Expectancy-value theory states that both students' expectancy for success and their value for academic activities predict motivational outcomes such as achievement, involvement, and academic choices. It differs from other approaches that emphasize competence as the central motive. Expectancy-value research argues that "even if people are certain they can do a task, they may not want to engage in it" (Eccles, Wigfield, & Schiefele, 1998, p. 1028). Expectancy-value research has demonstrated that both expectancy and value make distinct and complementary contributions to students' performance and reports of motivated behaviors, such as effort and persistence (Eccles, 1983; Wigfield & Eccles, 1992), and to the use of self-regulatory strategies (Pintrich & De Groot, 1990). In addition, studies have shown that adolescents' subjective task values predicted taking math and English classes, engaging in sports activities, and choosing a college major (e.g., Eccles, 1983; Meece, Wigfield, & Eccles, 1990).

Although none of this research explicitly examined classroom factors that might contribute to students' expectancy or value beliefs, it was conducted with K-12 students in classroom settings. On the basis

of the positive associations found among value, expectancies, motivation, self-regulation, and achievement, expectancy-value theory researchers have argued that their research has important implications for classroom practice.

Stated Implications of Expectancy-Value Theory

To encourage students to develop subjective task value, teachers are encouraged to promote active participation and student control by providing some options, such as when, where, how, and which activities students pursue, and to avoid controlling statements and behaviors. In addition, teachers should select topics and activities that are authentic and meaningful to help their students discover the importance and utility value of the material. To promote a sense of competence and high expectancies for success, teachers are encouraged to provide moderately challenging tasks that help students see improvement. In addition, teachers should emphasize learning by providing specific feedback on progress and strategy use (rather than relative standing), communicating expectations that all students can and will learn, and attributing performance to effort. Teachers are also encouraged to create a supportive and caring classroom community that makes students feel valued and safe to take academic risks.

Empirical Support for the Stated Implications

A series of studies conducted by Eccles, Midgley, and their colleagues examined declines in students' expectancies and values as they made the transition from elementary to middle school. Eccles and Midgley (1989) hypothesized that these negative changes might be related to a mismatch between students' developmental needs for autonomy, competence, and relatedness, and classroom practices in middle school. Midgley and Feldlaufer (1987) found that after the transition, students desired but had fewer decision-making opportunities than in elementary school. This mismatch predicted a decline in students' value (Mac Iver & Reuman, 1988). After the transition to middle school, practices that may have increased the opportunities for social comparison were related to declines in students' perceptions of competence (Eccles et al., 1989). In addition, students who moved from high- to low-efficacy teachers during the transition had lower expectancies for success in math, lower perceptions of their performance in math, and higher perceptions of the difficulty of math (Midgley, Feldlaufer, & Eccles, 1989). Finally, students who moved from teachers they rated high in supportiveness to teachers rated low in supportiveness during the transition reported a decline in their ratings of intrinsic value, perceived usefulness, and importance of math (Feldlaufer, Midgley, & Eccles, 1988).

In another study (Eccles, 1983), observers attended mathematics classes to determine which teacher behaviors were related to students' motivation. They found that teachers' expectations influenced both achievement expectancies and course taking. For girls, the number of response opportunities and the number of open questions were positively related to value (liking) of math. In summary, data collected in classrooms showed definite relationships between teacher behaviors and students' reports of expectancy and value.

Self-Determination Theory

Self-determination theory (SDT) argues that human beings have three innate' needs: competence, autonomy, and relatedness (Deci & Ryan, 1985). It is the satisfaction of these needs that leads to intrinsic motivation. Much classroom-related research has focused on the autonomy component, because SDT contends that only freely chosen, rather than coerced, actions can be experienced as intrinsic. This may provide a theoretical rationale for why some students, even when they learn, feel little joy or pride: learning that is controlled by others is not owned.

SDT theorists acknowledge that not all school learning is intrinsically motivating. Nevertheless, they argue that one can gradually internalize extrinsic reasons for completing necessary, but unappealing, activities and, thus, infuse agency into daily learning activities. As motives for engaging in tasks become more internalized, the potential for self-determination and autonomy increases. If self-determination-promoting teacher behaviors can be shown to promote gradual internalization of extrinsic motivation in the classroom, the SDT model would have important applications in the classroom.

Stated Implications of Self- Determination Theory

Students in K-12 classrooms typically have little control over classroom activities, so much research in this tradition has focused on the negative effects of controlling behaviors. Because some research has

revealed that teachers' controlling behaviors are related to decreases in students' intrinsic motivation and achievement, as well as increased feelings of anger and anxiety (Assor, Kaplan, Kanat-Maymon, & Roth, in press), SDT recommends that teachers refrain from overtly controlling student behaviors. Giving students incompetence feedback, imposing strict deadlines, using threats and competition to control behavior, giving frequent directives, interfering with children's natural pace of learning, and not allowing expression of critical or independent opinions are all discouraged by SDT researchers. Instead, teachers are encouraged to provide optimal challenges, informational feedback, interesting and stimulating material and assignments, and opportunities to view effort as a key contributor to performance (Deci & Ryan, 1985). Teachers are also encouraged to show affection, express interest in students' activities, and devote time and resources to students (Assor & Kaplan, 2001).

Empirical Support for the Stated Implications

Most SDT research has used experimental or survey research designs in classrooms. We could find no studies that used observation or interview methods. A few studies used student reports of the autonomy supportiveness of teachers in classrooms, and then linked these reports to measures of student motivation and achievement. Higher perceived support for autonomy in the classroom was related to higher intrinsic motivation, mastery motivation, perceived competence, and self-esteem (Deci, Schwartz, Sheinman, & Ryan, 1981; Ryan & Grolnick, 1986).

Although SDT studies have not taken measures of teachers' actual classroom behaviors, an experimental study of student teachers showed that autonomy-supportive instruction included listening, asking questions about what the student wanted, responding to student-initiated questions, and offering statements that acknowledged the student's perspective (Reeve, Bolt, & Cai, 1999). This study did not examine potential links between these teacher behaviors and student motivation or achievement.

Skinner and Belmont (1993) found that third- to fifth-grade students who perceived the greatest amount of structure, autonomy support, and involvement in the classroom had teachers who were dependable and showed affection for, were attuned to, and dedicated time and energy to, their students. Students of high-involvement teachers also reported the most behavioral engagement, such as effort and persistence, and positive emotion, such as interest and happiness. Assor and Kaplan (2001) investigated the relation between students' perceptions of their teachers' directly controlling and autonomy-supportive behaviors and their motivation while studying. Directly controlling teacher behaviors predicted mostly negative student feelings (i.e., anger, stress, boredom) during learning, whereas autonomy-supportive behaviors predicted positive feelings (i.e., interest and enjoyment). Perceptions of competence were related to enjoyment of learning as well.

Two studies investigated the relation between autonomy-supportive classrooms and dropping out of high school. Each found that teacher autonomy support was related to student perceptions of competence, autonomy, and intention to persist in, or drop out of, school (Hardre & Reeve, 2003; Vallerand, Fortier, & Guay, 1997). Additional research examined predictors of achievement and school adjustment among students with learning disabilities and those with emotional handicap s (Deci, Hodges, Pierson, & Tomassone, 1992). For students with learning disabilities, competence was the best predictor of achievement and adjustment. Interestingly, perceived autonomy best predicted these outcomes for students with emotional handicaps. This study suggests that different needs may be more salient for different students, and that focusing on meeting one need, such as competence, may not serve all students best. In summary, SDT studies have linked autonomy, as well as perceptions of autonomy and competence in the classroom, to achievement and to behavioral, motivational, and emotional outcomes for students. However, studies of how teachers establish autonomy-supportive classrooms have not yet been done.

Attribution Theory and Control Beliefs

The importance of perceived control in the development and support of competence motivation has been a central focus of attribution research and Dweck's (1999) work on theories of intelligence and locus of control constructs. The basic premise of this research is that when students believe that their academic achievement depends on controllable factors, they are more motivated and gene rally achieve at higher levels than when they feel a lack of control over their own learning (Pintrich, 2004; Weiner, 1986). Although it may be more adaptive at the situation-specific level for students to attribute failure to unstable, uncontrollable causes (e.g., bad luck or a particularly difficult exam), at the individual-difference level, greater perceptions of control are associated with increased motivation. As

de Charms (1968) argued, it can be difficult to feel competent when one feels like a "pawn" rather than an "origin" of behavior.

Implications of Attribution Theory and Control Beliefs

To help their students develop or maintain a sense of personal control over their learning and achievement, teachers have been encouraged to assess their students' attributions for success and failure, to provide feedback that encourages students to recognize the control they have over their learning, and to alter attributional styles that diminish their sense of control (i.e., attributional retraining) (Pintrich & Schunk, 2002). Dweck (1999) suggested that when providing students with feedback, teachers should emphasize process factors, such as effort, the use of appropriate strategies, and individual growth, rather than just the end result as a means of encouraging students to adopt an incremental view of ability. Attribution research has highlighted the importance of feedback that is both accurate and, particularly in the case of failure, focused on the unstable, changeable causes for failure (Blumenfeld, Pintrich, Meece, & Wessels, 1982). In some cases, teachers have been encouraged to engage in ongoing attribution retraining with students to help them develop controllable attributions that can replace helpless attribution patterns (Foersterling, 1985).

Empirical Support for the Stated Implications

Although there is substantial evidence from experimental research that attributions for success and failure can be changed from uncontrollable, stable attributions to controllable attributions, there is little research demonstrating a link between teacher behaviors and student attributions in classrooms. Research from the 1980s revealed that teacher feedback about the causes of success and failure can influence students' perceptions of their own ability and effort (Pintrich & Blumenfeld, 1985). But it also revealed that teachers favor effort feedback and rarely offer ability feedback or attributions (Blumenfeld et al., 1982). When teachers do make ability attributions or give ability feedback (e.g., "You must be really smart in math!"), it is likely to be salient, because it is rare. Research on the effects and student interpretations of such unusual feedback is scarce.

Rosenholtz and Simpson (1984) argued that whole-group (rather than cooperative or individualized) instruction, ability grouping, and providing public feedback fostered social comparison and encouraged students to think of ability as stable. Rosenholtz and Wilson (1980) demonstrated this in surveys of fifth- and sixth-grade students. They found that some students were quite able to perceive ability messages that teachers made salient. Such messages may have been particularly damaging to low-ability students, a group most likely to adopt ego-protective strategies (Covington, 1992), reducing effort, persistence, and intrinsic motivation. Experimental studies have also demonstrated that children interpret pity and excessive help as signals to make low-ability attributions and to set lowered expectations for success (Graham, 1984). Also, teachers' use of praise (to preserve the ego s of low achievers) and criticism (to express high expectations for high achievers) can influence low-ability students' motivation negatively.

Other Research Related to Competence Beliefs in the Classroom

Motivational Influence of Effective Instruction

Some research on teacher influences on student competence motivation has been conducted outside of the major motivation frameworks described previously. Stipek, Salmon, et al. (1998) argued that "best practices," as advocated in the instructional literature, have positive influences on competence motivation primarily through stressing appropriately challenging and meaningful tasks, emphasizing learning and improvement, and encouraging students' active participation and autonomy. Turner et al. (1998) found that when teachers used appropriately challenging mathematics instruction, students reported the highest intrinsic motivation (and the least boredom).

Teachers' Beliefs and Emotions

Teachers' beliefs regarding ability (malleable vs. fixed), their expectations (Weinstein, 2002) and their own efficacy to teach (Ashton & Webb, 1986; Midgley et al., 1989) should affect the teaching practices used, which, in turn, create a climate that focuses children's attention on either improving or demonstrating competence, or avoiding demonstration of incompetence.

Weinstein (2002) demonstrated that even young children perceive teacher differential treatment and teacher expectations in the c1asstoom. If students perceive low expectations from their teacher, they may develop low perceptions of ability and reduce effort in the c1assroom. Using interviews with children, Weinstein found that students learned about teacher expectations and perceptions of student ability by attending to the type of work they were assigned, things the teachers said, when and how much they offered help, the type of feedback they give, and even teachers' nonverbal cues, such as facial expressions and tone of voice. Children reported that teachers' feedback was often public and comparative rather than private and focused on individual progress or quality of their work. Children's motivation and liking of the subject matter dec1ined when they perceived low expectations and low ability cues. Based on classroom observations, Weinstein conc1uded that certain features were likely to send messages about expectations. They inc1uded grouping, materials, evaluation system, motivational strategies, responsibility given to children, and relationships in c1ass (warmth, trust, humor, and concern) with peers, and with teachers.

SUMMARY OF RECOMMENDATIONS FOR ENHANCING COMPETENCE MOTIVATION IN CLASSROOMS

There is quite a bit of overlap across the various motivational approaches previously reviewed regarding the suggestions for promoting competence motivation in the c1assroom. Synthesizing across research programs, we developed the following list of suggested c1assroom practices. Table 17.1 summarizes this list, as well as the motivational perspectives that support each recommendation and potential difficulties of implementing them.

- 1. Develop and assign academic tasks and activities that are personally meaningful and relevant for students.
- 2. Develop and assign moderately, or appropriately, challenging tasks and material.
- 3. Promote perceptions of control and autonomy by allowing students to make choices about c1assroom experience and the work in which they engage. Also, encourage students to view intelligence, learning, and performance as personal1y controllable by attributing performance to controllable factors such as effort and strategy use. Avoid controlling or coercive language and instructional practices.
- 4. Encourage students to focus on mastery, skill development, and the process of learning rather than just focusing on outcomes such as test scores or relative performance.
- 5. Help students develop and pursue proximal, challenging, achievable goals.
- 6. Infuse the curriculum with fantasy, novelty, variety, and humor.
- 7. Provide accurate, informational feedback focused on strategy use and competence development rather than social-comparative or simply evaluative feedback.
- 8. Assess students' confidence, attributional tendencies, and skill levels to help meet their preferences for challenge and to help students approach tasks with realistic expectations and cope with difficulties adaptively.

Despite their appeal, many of these recommendations are not based on classroom research, and the recommendations for the application of these motivational principles have often not been tested in classrooms. In the next section, we raise some questions about the applicability of the empirical support for the stated classroom applications and implications of motivation research.

CAUTIONS ABOUT APPLYING MOTIVATION PRINCIPLES IN CLASSROOMS

With the exception of research on achievement goals and expectancy-value research, there have been few studies examining the association between teacher practices and student motivation in the classroom. There is ample reason to suspect that many of the stated implications of motivation research for classroom practice will not actually work in the classroom as predicted (Blumenfeld, 1992). In fact, some empirical research calls both theoretical claims and recommended practices into question. Although research has explored many of the factors that contribute to individuals' becoming and feeling competent, it is not clear that these conditions can be created regularly in the classroom. In many classrooms, there are greater incentives for students to be competent or to appear competent than there are for becoming competent. Becoming competent gene rally involves effort and risking failure. Both of these may be more problematic in classrooms than in experimental research situations. In this section, we consider a non-exhaustive list of several factors that may inhibit the application of motivation principles in the classroom. First, we consider two general questions about the relevance of applying research to practice. Then, we consider how the application of specific motivational principles, simple as they may seem, is complicated by the complex nature of classrooms.

· Can experimental research be applied to classrooms? Much of the research on competence motivation has been conducted using experimental methods. In these studies, participants are gene rally taken out of their regular classrooms and given some sort of individual instruction or training, and the effects of the instruction or training on subsequent motivation are examined (e.g., Schunk's selfefficacy studies in the 1980s, attribution retraining, achievement goal manipulations; Elliot & Harackiewicz, 1996). Although this research has clearly demonstrated that motivation can be influenced by such manipulations, there are a number of reasons to suspect that these experimental conditions cannot be recreated in regular classrooms. First, the sheer number of students in most classrooms makes individualized instruction, such as that used in attribution retraining, difficult. Second, the motivational messages salient in most classrooms tend to be much more mixed than those found in the typical experiment. For example, experimental manipulations of achievement goals typically involve telling participants in different conditions that the purpose of the task is to pursue a single goal (e.g., do better than other students). In classrooms, students are often given mixed goal messages. For example, students may be encouraged to focus on their own improvement but may be evaluated in either normative or absolute grading systems that disregard improvement. Third, the meaning of tasks or instructions may differ in classrooms and experimental conditions. For example, a focus on achieving short-term, proximal goals may enhance efficacy and motivation in experimental settings but may be embarrassing and demotivating in a more public setting such as classrooms. Pursuing proximal goals that are much less advanced than one's classmates may be humiliating, whereas focusing on long-range, distal goals, even if they are not achievable, may help some students save face in front of their classroom peers.

• Do survey and experimental research provide an accurate picture of the classroom? Students' responses to surveys or behavior in experiments may offer a distorted view of the classroom. As previously mentioned, in experimental situations, students often respond to clear instructions in predictable ways. Similarly, responses to researcher-provided, closed-ended survey questions regularly produce predictable associations between students' perceptions of the classroom motivational climate and their own motivational orientations. But when researchers have actually examined what happens in classrooms, they find that teacher and student behavior does not always conform to theoretical specifications and is often unpredictable. This may be related to the fact that most theory is deductive and based on what is logical rather than empirical (Turner & Meyer, 1999). Urdan and his colleagues (1999) found that teachers rarely discussed goals, and students often did not perceive even the most blatant goal messages, as theory would predict. Miller and Meece (1997) found that even when the teachers they worked with to modify their reading and language arts assignments faithfully implemented the intervention, their third-grade students' achievement and strategy use was not altered. Meece (1991) found that classrooms with higher average levels of student mastery goal orientation did not differ from those with lower average levels of mastery goal orientation in either the cognitive complexity of the tasks assigned or the grouping patterns of students. Patrick, Anderman, Ryan, Edelin, and Midgley (2001) found that classrooms that differed in their perceived levels of mastery and performance goal structures did not differ in the frequency with which students were asked to demonstrate their knowledge publicly or the use of extrinsic rewards. Similarly, Turner and her colleagues (2002) discovered that social comparison in classrooms perceived as having a high performance focus was related less to public evaluation per se and more to nuanced factors, such as teacher affect, and to instructional practices. These observational studies all found that elements of instruction believed to influence the motivational goals of students (e.g., types of tasks, social organization of students, how students were rewarded or recognized, how public demonstration of knowledge was) did not necessarily work in ways predicted by theory or by the results of survey and experimental studies.

Survey and experimental research may also distort the true nature of teacher influence on student motivation in classrooms. Such research typically suggests a unidirectional flow of influence from teachers to students. In reality, the motivational climate in classrooms is produced by a reciprocal exchange of messages that flows constantly between students and teachers, and among students themselves. For example, when students in a classroom report that their teacher uses instructional practices that reflect a mastery goal orientation and create a mastery goal structure in the classroom, it is possible that the teacher has adopted those strategies in response to her perception that the students were motivated by mastery messages. By appropriately responding to students' preferences, the teacher may also reinforce students' mastery goal orientations. It is hard to trace the causal flow of motivational influences in classrooms. Survey studies that reveal an association between teacher practices and students' motivation may not accurately reflect the direction of causal influence.

Table 17.1. Summary of recommended classroom practices for enhancing competence motivation

Recommended practice 1: Develop and assign academic tasks and activities that are personally meaningful and relevant for students.		
Theoretical proponent	Achievement goal research, E-V theory, SDT, intrinsic motivation and interest research	
Empirical support	Some evidence from E-V research, interest research, intrinsic motivation, and goal theory show an emphasis on meaning related to greater engagement and motivation.	
Limitations of empirical support	Meaning and relevance of academic work almost never examined in actual classroom settings.	
Barriers to class- room application	Very difficult to individualize instruction like this; hard to know what is mea- ningful to all students; more difficult than following prescribed curriculum.	
Recommended practice 2: Develop and assign moderately or appropriately challenging tasks and material.		
Theoretical proponent	Achievement goal research, SDT, intrinsic and interest, E-V, self-efficacy	
Empirical support	Experimental research in several motivation programs shows engagement higher on moderately challenging tasks.	
Limitations of empirical support	As with meaning and relevance, challenge level rarely examined in classrooms. Some evidence that students resist challenge.	
Barriers to class- room application	Teachers often not good at designing tasks of appropriate challenge; students resist challenge.	
Recommended practice 3: 3. Promote perceptions of control and autonomy by allowing students to make choices about classroom experience and the work they engage in (e.g., what books to read, how to demonstrate knowledge, etc.). Encourage also students to view intelligence, learning, and performance as personally controllable by attributing performance to controllable factors like effort and strategy use. Avoid controlling or coercive language and instructional practices.		
Theoretical proponent	Achievement goal research, attribution theory, Dweck's "theories of intelligence" research, SDT	
Empirical support	Attribution research on benefits of controllable attributions; Dweck's research on malleable intelligence theories; E-V research demonstrating declines in value, competence perceptions associated with declines in perceived control; SDT research demonstrates that perceptions of autonomy are related to positive student outcomes including interest, competence perceptions, positive affect, and self-esteem.	
Limitations of empirical support	Attribution and theory of intelligence research tends to be experimental; little research observing how teachers promote autonomy and control beliefs in the classroom, or how students perceive autonomy-supportive and coercive teacher practices. Mostly survey research in SDT and E-V areas.	
Barriers to class- room application	Can be difficult for teachers to walk the fine line between promoting autonomy and offering too little scaffolding for learning. Encouraging students to attribute performance to effort can backfire if high effort leads to low performance. Teachers under increasing pressure to follow narrow curriculum; increase in student test scores can cause them to be more coercive with their students.	

Note: E-V, expectancy-value theory; SDT, self-determination theory.

Table 17.1 (Continuation)		
Recommended practice 4: Encourage students to focus on mastery, skill development, and the process of learning rather than just focusing on outcomes like test scores or relative performance.		
Theoretical proponent	Achievement goal research, attribution theory, self-efficacy, E-V theory, SDT	
Empirical support	Student perceptions of mastery goal structures; observational studies of classroom goal structures; Schunk et al. studies of strategy training; attribution retraining studies	
Limitations of empirical support	Surveys and observations make causal direction difficult to determine, but they were at least looking at genuine classroom processes; variation in perceptions of classroom goal messages; SE, attribution studies were experimental.	
Barriers to class- room application	Can produce mixed message when grades are based on absolute performance level and test scores are norm-referenced. Social comparison can be motivating for many students; occurs naturally.	
Recommended practice 5: Help students develop and pursue proximal, challenging, achievable goals.		
Theoretical proponent	Self-efficacy	
Empirical support	Series of studies by Schunk and colleagues;' Shell and colleagues; Pajares and colleagues	
Limitations of empirical support	Schunk et al. were experimental-may not replicate in classrooms. Shell, Pajares studies were survey did not focus on classroom processes.	
Barriers to class- room application	Requires individualizing instruction, which is time-consuming. Difficult for teachers to know level of all students and to design appropriately challenging tasks.	
Recommended practice 6: Infuse the curriculum with fantasy, nove1ty, and humor.		
Theoretical proponent	Interest and intrinsic motivation	
Empirical support	Summarized by Bergin; Malone & Lepper; Lepper & Henderlong	
Limitations of empirical support	Based on experiments and computer applications; not examined in classrooms	
Barriers to class- room application	Can detract from primary concepts to be learned; more difficult than following textbook.	
Recommended practice 7: Provide students with competence feedback that is informational, not just evaluative.		
Theoretical proponent	Self -efficacy, SDT, E-V, attribution, achievement goal research, teacher expectancies	
Empirical support	Schunk experiments; SDT research on controlling practices; Weinstein research on teacher expectancies	
Limitations of empirical support	Based mostly on experiments in self-efficacy, SDT, and intrinsic motivation research	
Barriers to class- room application	Summative evaluations are required in school. Grades become most valued feedback for students.	

Recommended practice 8: Assess students' knowledge, self-efficacy, and attributional patterns in order to select optimally challenging tasks for them, approach tasks with realistic expectations, and explain failures adaptively.

Theoretical proponent	Self-efficacy, attribution theory, SDT	
Empirical support	Alfi, Katz, & Assor; Clifford	
Limitations of empirical support	There is little or no research reporting teachers' assessments of these student characteristics in real K-12 classrooms.	
Barriers to class- room application	Difficult to accurately assess skills, attributional tendencies, and self-efficacy for all students in large classes, particularly secondary level. Efficacy, attributions may be highly task specific, difficult to assess constantly.	

• Can teachers really encourage students to seek challenge? Just as the academic environment provides opportunities to become and feel competent, it offers a wide array of opportunities to be and feel incompetent. Fear of being incompetent can motivate some students to exert additional effort, with an eye toward achieving success, but it can also be demotivating, causing students to adopt an avoidance goal orientation in achievement situations and withdraw effort (Elliot, 1997).

As an example of the double-edged sword of competence motivation, consider the stated implication of a number of motivation approaches that teachers should assign moderately challenging tasks to students. Such tasks are believed to stimulate interest, encourage intrinsic motivation, and spur the adoption of a mastery goal orientation. Although many students find challenging tasks motivating, for a number of students, these types of tasks arouse fear, because challenging tasks carry opportunities for failure. Research has clearly documented a link between fear of failure and the adoption of performance-avoidance goals (Elliot, 1999). When such failure occurs in front of teachers and peers, as it does in classrooms, the fear of appearing and feeling incompetent often causes students to adopt defensive, withdrawing behaviors in class. The same type of activity that can spur competence motivation in an experiment may, for many students, lead to a lack of effort and motivation, and the adoption of self-handicapping strategies (Urdan & Midgley, 2001). Unfortunately, in many classrooms, it may be worse to try and fail than to not try at all.

Even when teachers want to provide challenging tasks for students, there is considerable evidence that their efforts may not be fruitful (Blumenfeld, 1992). Because students understand the inherent dangers of failing at challenging tasks, they often resist this type of work and try to negotiate down the demands of the task with the teacher (Doyle, 1986). In addition, research shows that teachers are not particularly adept at developing or selecting appropriately challenging tasks (Bennett, DesForges, Cockburn, & Wilkinson, 1984). Teachers often select tasks that do not match the skills and abilities of their students well, partly because most classrooms contain students with a wide range of abilities. Finally, teachers do not always understand how to support students when engaged in challenging work, and this may discourage students from persisting (Turner, Meyer, Midgley, & Patrick, 2003). This combination of factor s may discourage teachers from assigning creative or challenging work and lead them to settle for lower level facts, algorithms, or even completion as indicators of learning and achievement. To achieve the balance of high cognitive demand and the safety necessary for students to respond positively, challenge needs to be offered in a classroom that stresses mastery goals and the constructive value of error (Clifford, 1984). Most classrooms are not very successful at helping students see error as informational, possibly because many teachers rely on correct answers to know that students are learning.

• Can teachers provide interesting, meaningful, and relevant tasks? Many motivational researchers suggest that teachers create and select interesting and relevant tasks for students. This is very difficult for most teachers to do. Students' interests and values are so varied that it is hard for teachers to find material or tasks that most or all students will find personally meaningful or interesting. Recognizing this difficulty, some researchers have suggested that teachers try to stimulate students' situational interest by selecting broadly appealing topics that most children of a certain age would find appealing, or by incorporating elements of fantasy, humor, novelty, and variety into classwork (Bergin, 1999; Hidi, 2000). Although these may be good ideas, in practice, teachers often are confined to following a fairly narrow curriculum that is heavily dependent on textbooks. Research suggests that efforts to enliven

the material in textbooks often fail, leading to an obfuscation of the content goals (Brophy & Alleman, 1991). Blumenfeld (1992) argued that trying to make classroom tasks or material s more interesting by adding variety, novelty, and humor can actually "detract from a focus on the real content and problem and probably does not sustain motivation to learn over the long haul" (p. 273). In the end, it may be the teacher's interest in the task that helps students to see its value and relevance, rather than characteristics of the task itself.

• *Can student autonomy and control really be encouraged in classrooms?* Self-determination theory, achievement goal approaches, and attribution theory all emphasize the importance of students' perceiving that they have some control over learning. When students feel that their participation is not voluntary, and that educational outcomes (particularly bad ones) are beyond their control, competence motivation is reduced. Given the compulsory nature of KK12 education, the increasing standardization of the curriculum and emphasis on high-stakes testing, and strong criticism of too much choice offered by "shopping mall" high schools, developing a sense of autonomy in school may be problematic. Can students feel like origins rather than pawns when they are told they must go to school, must read selected textbooks, and must pass certain tests to advance to the next grade or graduate? Even as their choices about which classes to take are being ever reduced? We suspect that students, particularly adolescents, develop an understanding of their lack of autonomy in schools.

Attribution theory suggests that teachers can encourage students to develop a sense of control by encouraging them to view performance, particularly poor performance, as attributable to effort. But when students try hard and fail, as many do, it becomes difficult to avoid attributing failure to a stable, uncontrollable lack of ability. In addition, certain teacher beliefs may clash with the goal of supporting students' perceptions of control. For example, teachers of early adolescents tend to believe that they need to exert more control over students than do teachers of elementary school children, thereby potentially reducing adolescents' sense of autonomy in the classroom (Midgley & Feldlaufer, 1987). Teachers who lack a sense of efficacy to influence the performance of their students, particularly their lower achieving students, have difficulty helping their students view achievement as personally controllable (Tschannen-Moran, Hoy, & Hoy, 1998). In addition, teachers who tend to attribute student achievement to relatively stable factors, such as intelligence, socioeconomic status, or race, may send messages about low expectations and therefore be less inclined to encourage their students to view effort as the cause of academic success and failure (Weinstein, 2002). Finally, as teachers come under increasing pressure to have their, students perform well on standardized tests, they may feel the need to exert greater control over their students, thereby reducing students' perceptions of their own agency (Pelletier, Seguin-Levesgue, & Legault, 2002).

• Do teachers understand or value the recommended applications of motivation research? If principles of motivation research are to be applied in the classroom, teachers will have to endorse them. It is not at all clear that they do, either because they have had little opportunity to learn about research in motivation, or because they do not accept the principles or believe they will work. As previously mentioned, many do not believe that students should have control and voice in the classroom. Although a number of achievement goal researchers have argued that an emphasis on competition in the classroom can produce fears among students that may activate avoidance motivation, research indicates that many teachers believe in the motivational power of competition (Thorkildsen & Nicholls, 1998). Many simmply view students as unmotivated and do not endorse the premise that human beings have a natural inclination to understand and master new material. They think that students and families bear responsibility for motivation, not teachers (Urdan, Midgley, & Wood, 1995). Teachers' efficacy and attributions for student achievement influence their beliefs about whether they can influence their students' motivation and, therefore, their willingness to try.

Even if teachers wanted to apply some or all of the motivation principles in their classrooms, a number of practical constraints would inhibit their efforts. One of these is that the jargon of motivation research, usually developed by psychologists, is not readily understood or accessible to teachers (or anyone who has not devoted years to the study of motivation). Another constraint is that the faithful implementation of even one or two of the practices recommended by motivation researchers would require significant changes in teachers' regular practices. Although change is very time-consuming, teachers are afforded little time to change instructional practices. Tollefson (2000) argued that before teachers alter their teaching styles, school structures must be altered to encourage the professional development of teachers. Dividing teachers into separate classrooms teaching large numbers of students in discrete academic disciplines inhibits sharing of information among teachers and leaves little time for meaningful instructional innovation. Simply telling teachers what they should do to enhance the competence motivation of their students is clearly not enough to make it happen. It may

take a much larger vision, involving an understanding of how research can contribute to practice (Burkardt & Schoenfeld, 2004). This is a general concern in educational research, not just in motivation.

FUTURE DIRECTIONS

To better understand how competence motivation can flourish in classrooms, we need to expand our focus and our methods, and to develop theories of motivation based on studies of classrooms. Enlarging the focus will entail casting our view beyond the individual to individuals and contexts. It will require generative thinking beyond paradigms that have dominated in psychology. Central to these goals is a way to understand the reciprocal relationships among people and between people and contexts. Such approaches have been used to examine content learning, but they have not been extended to "motivational learning."

Enlarging methods will involve spending time with teachers and students in their own settings, and finding ways to hear their voices, understand their thinking, and interpret their actions. More importantly, researchers and teachers must learn how to communicate their respective knowledge, both research- and practice-based. Enlarging theories might involve one of several possibilities. First, c1assroom research might help us change, elaborate, or consolidate existing theories of motivation. Second, other theories of learning, such as socio cultural approaches, might be adapted to understand competence motivation in c1assrooms. Third, new theories might emerge from inductive, grounded studies of motivation in c1assrooms. The recommendations that follow describe specific approaches that are consistent with our view of future directions in competence motivation research.

Conduct Observational and Ethnographic Studies

We need to identify the types of behaviors that teachers actually engage in during instruction. Descriptions of teacher practices may show that some practices thought to be important are not, or are superseded by others. Similarly, research might help explain under which conditions practices such as social comparison are harmful or neutral. These observations may either reflect the recommendations of motivation research or help construct new theories of motivation. Specifically, how do teachers make material interesting and relevant to students? How do they help students feel efficacious? How do they challenge students without scaring them? How do they encourage students to feel in control of their learning, to attribute their performance to effort, and to think of their ability as malleable? We do not know enough about what this looks like in c1asssrooms.

Include Students in the Equation

We need to talk to students about specific teacher behaviors and c1assroom events. Limited qualitative research has already revealed that the presence of motivational cues in the c1assroom does not ensure that students will attend to them or interpret them as predicted; thus, only certain messages may be relevant to students. Which messages make an impression? Are certain student needs, such as feelings of safety and relatedness in the c1assroom, prerequisite to satisfying others, such as competence motivation? How much do student characteristic s (e.g., age, achievement level, identity) affect their attention to and interpretation of these motivational messages? Assumptions about the transmission process from teachers' practices to students' motivational orientations may not be supported in the c1assroom and need to be validated through discussions with students.

Conduct Intervention Studies

Teachers often do not apply motivational principles in the c1assroom spontaneously. For instance, some research indicates that teachers rarely explicitly discuss goals or make a conscious effort to emphasize mastery goals rather than performance goals. Based on findings from observational studies, interventions such as design experiments could be particularly effective in examining how certain motivational principles can be put into practice in specific settings. Once tried and revised in certain settings, the resulting principles could be extended to a larger number of sites in different contexts. This kind of research, although difficult and expensive, would be one way both to discover what works and to learn how it works.

Expand Our Notion of Competence Motivation

Competence is related not only to beliefs about efficacy but also to other factors, such as value, autonomy, and relatedness. In a c1assroom, these individual motivations are likely related and interdependent, so that satisfying one is positively related to satisfying others. This suggests that there may be many routes to competence motivation, and that it is a multidimensional construct. Furthermore, we suggest that satisfying motivational needs is not an individual endeavor, but is interwoven with the concerns of teachers, students, and even school and community cultures. Therefore, ecological features such as a climate of trust and safety, built upon serious attention to the social dynamites in the classroom, must exist for approach motivation to succeed over fear and avoidance motivation. Seeking challenge, taking responsibility and ownership over learning, and viewing learning as a developmental process that involves mistakes (rather than simply a fixed ability) are all threatening, particularly in large classes filled with one's peers. For that reason, we believe that the larger picture, that of the classroom, should be the focus of our research on competence motivation in the decades ahead.

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