CHAPTER 3

What Factors Motivate Students to Learn?

My Students Are Going to Love This—NOT

This past semester, I finally got to teach a course that relates directly to my area of interest. I put in a lot of time and energy this summer preparing materials and was really excited going into the semester. I used a number of seminal readings in Continental Philosophy and assigned a research project based on primary documents from the nineteenth and twentieth centuries. I thought that students would be excited by the topic and would appreciate reading some of the classic works. But it did not turn out the way I had hoped, and I was really disappointed by their work. With the exception of the two philosophy majors and the one student who "needed an A to get into graduate school," they were not at all interested in the readings and hardly participated in the discussions. In addition, they were not particularly inspired or creative in choosing research topics. Overall, they made little progress across the semester. I guess when it comes right down to it, most students do not much care about philosophy.

Professor Tyrone Hill

A Third of You Will Not Pass This Course

My colleague who usually teaches Thermodynamics was on leave for the semester, and I was assigned to take his place. I knew it would not be easy to teach this course: it has a reputation for being really hard, and engineering students only take it because it is required for the major. On top of that, my colleague had warned me that many students stop coming to lectures early on in the semester, and those who come to class often do not come prepared. It seemed clear that I needed a way to motivate students to work hard and keep up with the material. I recalled that when I was a student, any suggestion by the professor that I might not be up to the challenge really got me fired up and eager to prove him wrong. So I told my students on the first day of class, "This is a very difficult course. You will need to work harder than you have ever worked in a course and still a third of you will not pass." I expected that if my students heard that, they would dig in and work harder to measure up. But to my surprise, they slacked off even more than in previous semesters: they often did not come to class, they made lackluster efforts at the homework, and their test performance was the worst it had been for many semesters. And this was after I gave them fair warning! This class had the worst attitude I have ever seen and the students seemed to be consumed by an overall sense of lethargy and apathy. I am beginning to think that today's students are just plain lazy.

Professor Valencia Robles

WHAT IS GOING ON IN THESE STORIES?

In both of these stories, students fail to acquire and demonstrate the level of understanding the professors desire. In both cases,

a lack of engagement with the material seems to be at the root of the problem. To their credit, Professor Hill and Professor Robles both think hard about how to motivate their students, yet they make the common—and often flawed—assumption that their students would be motivated in much the same ways that they themselves were as students. When their students are *not* similarly motivated, the instructors conclude that they are apathetic or lazy.

However, a closer examination of these instructors' approaches and their unintended consequences reveals other likely explanations for student disengagement. Because Professor Hill is so passionate about the course content and finds it so inherently interesting, it does not occur to him that the features of the course that excite him most—the seminal readings and working with primary sources—do not hold the same value for his students. As a consequence, they approach the work half-heartedly and never successfully master the material. Professor Robles, for her part, hopes to recreate the highly competitive classroom environment that had motivated her as a student. However, her warnings about the difficulty of the material and the students' limited chances of passing may fuel preexisting negative perceptions about the course, compromise her students' expectations for success, and undermine their motivation to do the work necessary to succeed.

Although these two stories deal with slightly different issues, the concept of motivation lies at the core of each.

WHAT PRINCIPLE OF LEARNING IS AT WORK HERE?

Motivation refers to the personal investment that an individual has in reaching a desired state or outcome (Maehr & Meyer, 1997). In the context of learning, motivation influences the direction,

intensity, persistence, and quality of the learning behaviors in which students engage.

Principle: *Students' motivation generates, directs, and sustains what they do to learn.*

The importance of motivation, in the context of learning, cannot be overstated (Ames, 1990). As students enter college and gain greater autonomy over what, when, and how they study and learn, motivation plays a critical role in guiding their behaviors. In addition, because there are many competing goals that vie for their attention, time, and energy, it is crucial to understand what may increase or decrease students' motivations to pursue specific goals related to learning.

As we can see in the first story, if students do not find the content of the course interesting or relevant, they may see little or no value in mastering it and may fail to engage in the behaviors required for deep learning. Similarly, in the second story, if students do not expect to be successful in a course, they may disengage from the behaviors necessary for learning. Imagine how differently these two stories might have been if the students in Professor Hill's class saw value in learning to use primary sources and the students in Professor Robles' class expected their hard work to result in strong performance and good grades!

As these stories demonstrate, there are two important concepts that are central to understanding motivation: (1) the *subjective value* of a goal and (2) the *expectancies*, or expectations for successful attainment of that goal. Although many theories have been offered to explain motivation, most position these two concepts at the core of their framework (Atkinson, 1957, 1964; Wigfield & Eccles, 1992, 2000). As Figure 3.1 illustrates,

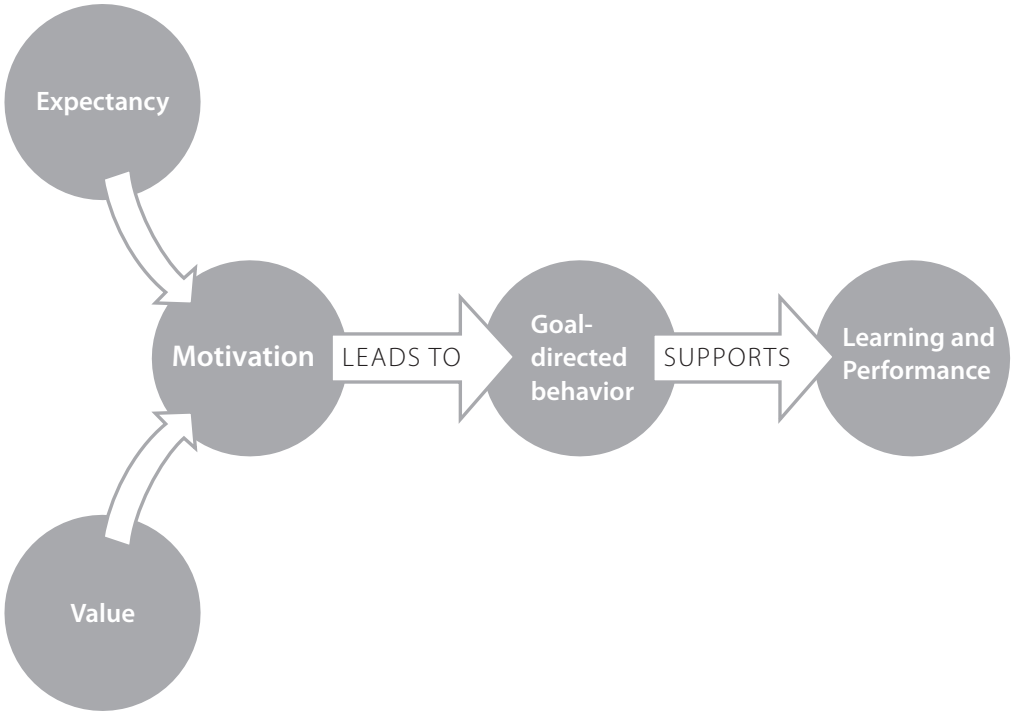

Figure 3.1. Impact of Value and Expectancy on Learning and Performance

expectancies and values interact to influence the level of motivation to engage in goal-directed behavior.

WHAT DOES THE RESEARCH TELL US ABOUT MOTIVATION?

Goals provide the context in which values and expectancies derive meaning and influence motivation. Hence, we begin with a brief discussion of goals.

Goals

To say that someone is motivated tells us little unless we say what the person is motivated to do. Thus, goals serve as the basic orga-

nizing feature of motivated behavior (Ryan, 1970; Mitchell, 1982; Elliot & Fryer, 2008). In essence, they act as the compass that guides and directs a broad range of purposeful actions, including those that relate to a person's intellectual and creative pursuits, social and interpersonal relationships, identity and self-concept, needs for safety and material possessions, and desires to be productive and competent in the world (Ford, 1992). Moreover, a number of goals are often in operation simultaneously. This is certainly true for college students who may, in any given moment, seek to acquire knowledge and skills, make new friends, demonstrate to others that they are intelligent, gain a sense of independence, and have fun.

When considering the ways that our students' goals influence their learning behaviors, it is worth noting that students' goals for themselves may differ from our goals for them. This mismatch was true in the first story at the beginning of this chapter. Professor Hill wanted his students to acquire an understanding of Continental Philosophy through the use and appreciation of primary sources. This goal clearly did not match his students' goals for themselves. A more general form of mismatch often occurs when we want our students to pursue learning for its own sake but they are motivated primarily by *performance goals* (Dweck & Leggett, 1988). Performance goals involve protecting a desired self-image and projecting a positive reputation and public persona. When guided by performance goals, students are concerned with normative standards and try to do what is necessary to demonstrate competence in order to appear intelligent, gain status, and acquire recognition and praise. Elliot and colleagues (Elliot, 1999; Elliot & McGregor, 2001) make a further distinction among performance goals. They suggest that goals focused on performance may take two forms: *performance-approach goals* and *performance-avoidant goals.* Students with performance-approach goals focus on attaining competence by meeting normative

standards. Students with performance-avoidance goals, on the other hand, focus on avoiding incompetence by meeting standards. They suggest that the cognitive framework with which students approach learning is different for those with an approach versus avoidance orientation, and results of research suggest that performance-approach goals are more advantageous to learning than performance-avoidance goals (Elliot & McGregor, 2001; Cury et al., 2006).

When guided by *learning goals*, in contrast to performance goals, students try to gain competence and truly learn what an activity or task can teach them. As you can imagine, if we want our students to gain the deep understanding that comes from exploration and intellectual risk-taking (a learning goal) but they want only to do what is necessary to get a good grade (a performance goal), we may not obtain the kinds of learning behaviors and outcomes that we desire. Indeed, most research suggests that students who hold learning goals, as compared to those who hold performance goals (particularly performance-avoidance goals), are more likely to use study strategies that result in deeper understanding, to seek help when needed, to persist when faced with difficulty, and to seek out and feel comfortable with challenging tasks. (For more discussion on learning versus performance goals, see Barron & Harackiewicz, 2001; Harackiewicz, Barron, Taucer, Carter, & Elliot, 2000; Miller, Greene, Montalvo, Ravindran, & Nichols, 1996; Somuncuoglu & Yildirim, 1999; McGregor & Elliot, 2002).

Students may also have other goals that conflict with our goals as instructors. *Work-avoidant goals* (Meece & Holt, 1993), for example, involve the desire to finish work as quickly as possible with as little effort as possible. Students guided primarily by work-avoidant goals may show little interest in learning and appear alienated, discouraged, or disengaged. It is important to remember, however, that work-avoidant goals are often context-specific,

such that a student who works very hard in one context may avoid work in another. For example, a dedicated engineering student may do as little as possible in Professor Hill's course if he does not see how the knowledge and perspectives from Continental Philosophy apply to his broader intellectual and professional growth and development.

Even though students' goals may not correspond exactly to our goals for them, these two sets of goals (ours and theirs) do not always conflict. In fact, when some of their goals align with ours, powerful learning situations tend to result. Imagine, for example, if the engineering student mentioned above came to see that being able to develop, present, and evaluate a logical argument could help him become a more effective engineer (for example, by helping him defend an engineering design choice to a client or to communicate engineering limitations to colleagues). With his own goals and his philosophy professor's goals in closer—and therefore more productive—alignment, his motivation to pursue learning goals may be strengthened.

Moreover, if an activity satisfies more than one goal, the motivation to pursue that activity is likely to be higher than if it satisfies only one goal. Relevant to this point is the fact that *affective goals* and *social goals* can play an important role in the classroom (Ford, 1992). For instance, if a student's goals in an industrial design project course include learning and applying fundamental design principles (a learning goal), making friends (a social goal), and engaging in stimulating activity (an affective goal), then allowing the student to work on the course project as part of a group provides her the opportunity to satisfy multiple goals at the same time and potentially increases her motivation. This point is further supported by research demonstrating that students who hold multiple types of goals are more successful than those with just one type of goal (Valle et al., 2003).

It is also possible, of course, that students hold a number of conflicting goals. For example, a student may have the goal of doing well on an upcoming psychology exam for which there is an evening study session scheduled. At the same time, he may also have the goal of bonding with his peers via intramural sports and consequently feel a pull to be at an intramural registration meeting held at the same time as the study session. To complicate matters even more, he may have the goal of remaining healthy and, since he has been experiencing a scratchy throat and other symptoms of a cold, may think it is wise to go straight to bed without attending the study session or intramural registration meeting. Given this range of competing goals, which one does he choose? There are some important variables that can provide insight into which goal the student will be motivated to pursue. Remember that value and expectancies interact to influence motivation. In the next section, we discuss value and in the following, expectancies.

Value

A goal's importance, often referred to as its *subjective value*, is one of the key features influencing the motivation to pursue it. Indeed, the lack of perceived value among Professor Hill's students almost certainly contributed to their lack of motivation, described in this chapter's first story. The issue here is quite simple. People are motivated to engage in behaviors to attain goals that have a high relative value. Thus, when confronted with multiple goals (such as going to a study session, attending a registration meeting, or fending off a cold by going to bed early), a student will be more motivated to pursue the goal that has the highest value to him.

Value can be derived from a number of different sources. Wigfield and Eccles (1992, 2000) suggest three broad determi-

nants of subjective value for achievement-related activities and goals. The first is *attainment value*, which represents the satisfaction that one gains from mastery and accomplishment of a goal or task. For instance, a student may receive great satisfaction from solving complex mathematical theorems and consequently work for many hours simply to demonstrate her ability to solve them. Similarly, people often spend hours playing video games in order to reach higher levels of mastery.

A second source of value is *intrinsic value*, which represents the satisfaction that one gains simply from doing the task rather than from a particular outcome of the task. This form of value is operating when students work tirelessly to design and build a beautifully crafted stage set, spend hours writing a computer program, or work hard to understand the complex interplay of variables that regulate blood flow to tumor cells simply because they love it. At its core, this value is intimately tied to the specific content of the goal or activity and is the source of what researchers have traditionally call *intrinsic motivation*.

A final source of value, one that Eccles and Wigfield call *instrumental value*, represents the degree to which an activity or goal helps one accomplish other important goals, such as gaining what are traditionally referred to as *extrinsic rewards*. Praise, public recognition, money, material goods, an interesting career, a high-status job, or a good salary are all longer-term goals that may provide instrumental value to shorter-term goals. For example, students who study business only because of the salary and prestige they expect a job in business will bring are motivated to study and attend their classes by the instrumental value the classes provide toward their desired salary and status.

Most of the students in Professor Hill's Continental Philosophy course appeared to have been unable to find any of the three sources of value. Like the two philosophy majors, for whom the content of the course held intrinsic value, and the

student for whom a good grade in the course was instrumental toward getting into graduate school, a single source of value may motivate behavior. However, in many cases, sources of value operate in combination. Indeed, the distinction between the traditional concepts of intrinsic and extrinsic motivation is rarely as dichotomous as theory posits. For instance, by working hard in a course, a biology student may derive value from multiple sources, including solving challenging problems (attainment value), engaging her fascination with biological processes (intrinsic value), and advancing her chances of getting into a good medical school (instrumental value). Consequently, it is important not to think of these sources of value as necessarily conflicting but as potentially reinforcing. In fact, a task that initially holds only instrumental value to a student (something he does primarily to earn a grade or satisfy a requirement) can come to have intrinsic value as he develops knowledge and competence in the subject area (Hidi & Renninger, 2006).

Expectancies

Although one must value a desired outcome in order to be motivated to pursue it, value alone is insufficient to motivate behavior. People are also motivated to pursue goals and outcomes that they believe they can successfully achieve. Conversely, if they do not expect to successfully achieve a desired goal or outcome, they will not be motivated to engage in the behaviors necessary to achieve it. Motivational theorists refer to these expectations as *expectancies*. Here we describe two forms of expectancies that help inform our understanding of motivated behavior.

To be motivated to pursue specific goals, students must hold positive *outcome expectancies*. Outcome expectancies reflect the belief that specific actions will bring about a desired outcome (Carver & Scheier, 1998). A student holds positive outcome expec-

tancies when he thinks, "If I do all the assigned readings and participate in class discussions, I will be able to learn the material well enough to solve problems on the exam and achieve a passing grade." In this case, there is a positive outcome expectancy linking the student's behavior and the desired outcome. In contrast, negative outcome expectancies involve a belief that specific actions have no influence on a desired outcome. For example, a student may think, "No matter how hard I work in this course, I won't get a good grade." This dynamic was likely to be at work among some of Professor Robles' students in the story at the beginning of this chapter. Professor Robles warned her students that a third of them were likely to fail, even after working harder than they had ever worked before. As a result, many of them may have developed negative outcome expectancies; in other words, they began to doubt that hard work would, in fact, result in a passing grade and so lost their motivation. Ironically, what Professor Robles thought would "fire up" her students might have profoundly demotivated them. In order for students to be motivated to engage in the behaviors that result in learning, they must believe that there is a connection between those behaviors and the outcomes they desire.

Whereas positive outcome expectancies are necessary for motivated behavior, they are insufficient on their own. *Efficacy expectancies* are also essential. Efficacy expectancies represent the belief that one is *capable* of identifying, organizing, initiating, and executing a course of action that will bring about a desired outcome (Bandura, 1997). So in order to hold a positive expectancy for success, a student must not only believe that doing the assigned work can earn a passing grade, she must also believe that she is capable of doing the work necessary to earn a passing grade. Thus it is the belief in personal agency that is the potent feature of this expectancy variable and that drives motivation.

What determines a student's expectation for success? One important influence is prior experience in similar contexts. If a

student has experienced success in a particular activity in the past, she is more likely to expect success in a similar activity in the future. If she has experienced failure in the past, she is more likely to expect failure in the future. A more complicated analysis of past success and failure suggests, however, that the *reasons* that students identify for their previous successes and failures may be an even more powerful determinant of expectancies. These reasons, or attributions, involve the causal explanations students use to make sense of the outcomes they experience (Weiner, 1986).

When students successfully achieve a goal and attribute their success to internal causes (for example, their own talents or abilities) or to controllable causes (for example, their own efforts or persistence), they are more likely to expect future success. If however, they attribute success to external causes (for example, easy assignments) or uncontrollable causes (for example, luck), they are less likely to expect success in the future. For instance, if a student attributes the good grade she received on a design project to her own creativity (ability) or to the many long hours she spent on its planning and execution (effort), she is likely to expect success on future design assignments. This is because she has attributed her success to relatively stable and controllable features about herself. These same features form the basis for her positive expectations for similar situations in the future.

When a student fails to achieve a goal, however, his motivation is likely to be low if he attributes his failure to a lack of ability (for example, "I am not good at math" or "I am just not a good writer"), especially if he sees his ability as fixed or not amenable to change. On the other hand, even in failure situations, motivation is likely to remain high if a student explains his poor performance in terms of controllable and temporary causes such as inadequate preparation, insufficient effort, or lack of relevant

information. Under these circumstances, students can maintain the belief that they are capable of changing their behaviors to achieve a more positive outcome.

Thus, in the context of the classroom, motivation and the effort and persistence that accompany it are highest among students who attribute successful performance to a combination of ability and effort, and poor performance to insufficient effort and inadequate information. These attributions form the basis for the expectation that good performance can be sustained and poor performance can be changed.

How Perceptions of the Environment Affect the Interaction of Value and Expectancies

Value and expectancies do not operate in a vacuum. Indeed, they interact within the broader environmental context in which they exist (see Chapter Six for more on course climate). From a student's point of view, this environment can be perceived along a continuum from supportive to unsupportive (Ford, 1992). Without question, the complex dynamics of the classroom, its tone, the interpersonal forces at play, and the nature and structure of communication patterns all combine to either support or inhibit the students' motivation to pursue a goal. If students perceive the environment as supportive (for example, "The instructor is approachable and several of my classmates seem willing to help me if I run into trouble"), motivation is likely to be enhanced. If students perceive the environment as unsupportive (for example, "This instructor seems hostile to women in engineering"), it can threaten expectations for success and erode motivation.

Thus, our framework for understanding motivation suggests that if a goal is valued *and* expectancies for success are positive *and* the environment is perceived to be supportive, motivation

will be highest. However, if there is little value associated with a goal *or* efficacy expectancies for success are negative *or* the environment is not perceived to be supportive, motivation is likely to be lower. So what does this mean for our classrooms and how students behave?

To begin, it is important to realize that we have three important levers (value, efficacy expectancies, and the supportive nature of the environment) with which we can influence motivation. Moreover, if we neglect any of one of the three, motivation may suffer substantially. Based on the work of Hansen (1989) and Ford (1992), Figure 3.2 presents the range of behaviors that result from the interaction of value and expectancies in both supportive and unsupportive environments.

When students care little about a goal and have little confidence in their abilities to successfully achieve that goal, they tend to behave in a *rejecting* manner. This characterizes students in both supportive and unsupportive environments. These students are prone to disengage from learning situations and may experience

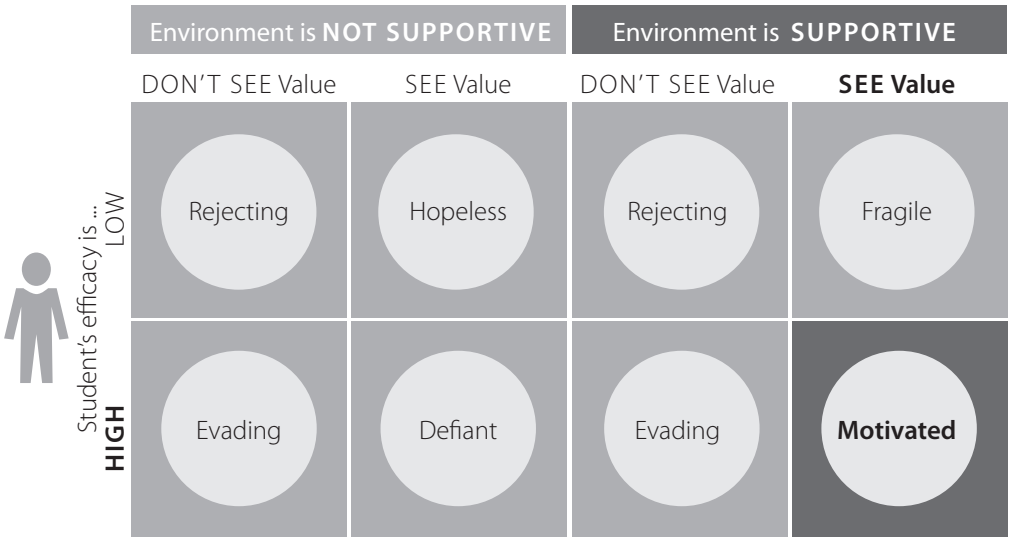

Figure 3.2. Interactive Effects of Environment, Efficacy, and Value on Motivation

apathy, general passivity, alienation, or even a sense of anger if, in the case of a supportive environment, support is perceived as coercive or pressuring.

When students, in both supportive and unsupportive environments, see little value in a goal but are confident in their abilities to successfully achieve it, they may act in an *evading* manner. Since they see the task as doable but unimportant, students often have difficulty paying attention and are frequently preoccupied by social distractions or daydreaming. Often, in an attempt to avoid overt disapproval and pressure from the instructor or the stigma associated with a poor grade, they may do the minimum amount of work that is needed to just get by.

Those students who see value in a goal but lack confidence in their ability to achieve it can manifest two forms of behavior, depending on the nature of the environment. Those that perceive little or no support from the environment tend to be *hopeless.* As such, they appear to have no expectation of success and demonstrate very low levels of motivation, behaving in helpless fashions. Those who do perceive a supportive environment tend to be *fragile.* That is, because they value the task and believe the environment offers support, they want to succeed. However, they are dubious about their own abilities and may try to protect their sense of self-esteem by feigning understanding, avoiding situations that require overt performance, denying difficulty, and making excuses to explain poor performance.

Similarly, depending on their perceptions of the supportive nature of the environment, students who see value in a task and have confidence in their abilities also manifest two forms of behavior. Those that perceive little or no support from the environment may be *defiant.* That is, because the task is important and they are confident of their own abilities, they may take an "I will show you" or "I will prove you wrong" attitude in response to the perceived lack of support from the environment. Those students

who perceive the environment to be supportive demonstrate the most *motivated* behavior. In essence, all three levers that influence motivation are aligned in a positive direction. As a consequence, these students seek to learn, integrate, and apply new knowledge and view learning situations as opportunities to extend their understanding.

Implications of This Research

Several important points should be evident thus far. First, value, expectancy, and environment interact to produce an array of distinctive student behaviors. Thus, no single variable is universally deterministic with regard to motivating students. That said, changes in any one dimension can change students' levels of motivation and thus alter their behaviors. For instance, providing support and encouragement to students who tend toward defiance can edge them toward greater motivation. Similarly, by helping "fragile" students build positive beliefs about their chances of success, we may support them to become more highly motivated. Indeed, each of the dimensions in the table represents features of the learning environment over which we, as instructors, can have substantial influence. Finally, if we neglect any single dimension, motivation may suffer substantially. As a case in point, if we fail to address students' perceived lack of value for a given task or goal, at best they are likely to demonstrate an evading pattern of motivation (see the left column of Figure 3.2). Similarly, if students perceive the environment in which they learn as unsupportive, even those who find value in the goal and hold positive efficacy expectancies may fall short of highly motivated behavior. Indeed, when the environment is perceived as unsupportive, the best we can hope for is a defiant pattern of motivation (see the top half of Figure 3.2).