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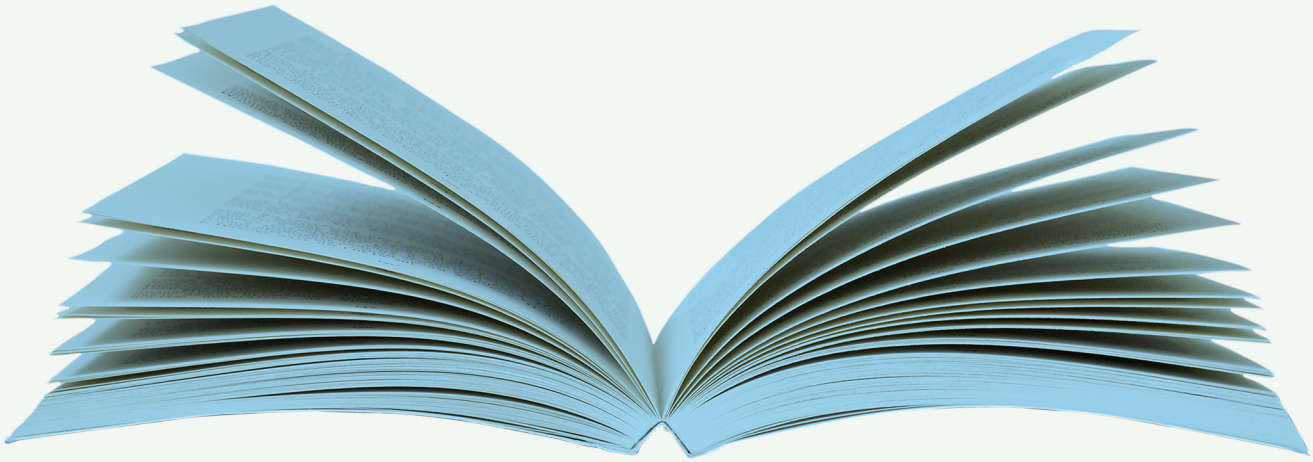
Motivation and the Learning Environment



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Chapter 1 Motivation: An Introduction

Not so long ago, a teacher named Barbara Fuller taught general science to elementary students, and one of her units was about insects and spiders. As part of the unit she had students search for insects and spiders around their own homes or apartments. They brought the creatures to school (safely in jars), answered a number of questions about them in their journals, and eventually gave brief oral reports about their findings to the class. The assignment seemed straightforward, but Barbara found that students responded to it in very different ways. Looking back, here is how Barbara described their responses:

"I remember Jose couldn't wait to get started, and couldn't bear to end the assignment either! Every day he brought more bugs or spiders—eventually 25 different kinds. Every day he drew pictures of them in his journal and wrote copious notes about them. At the end he gave the best oral presentation I've ever seen from a third-grader; he called it 'They Have Us Outnumbered!' I wish I had filmed it, he was so poised and so enthusiastic.

"Then there was Lindsey—the one who always wanted to be the best in everything, regardless of whether it interested her. She started off the work rather slowly—just brought in a few bugs and only one spider. But she kept an eye on what everyone else was bringing, and how much. When she saw how much Jose was doing, though, she picked up her pace, like she was trying to match his level. Except that instead of bringing a diversity of creatures as Jose was doing, she just brought more and more of the same ones—almost twenty dead house flies, as I recall! Her presentation was OK—I really could not give her a bad mark for it, but it wasn't as creative or insightful as Jose's. I think she was more concerned about her mark than about the material.

"And there was Tobias—discouraging old Tobias. He did the work, but just barely. I noticed him looking a lot at other students' insect collections and at their journal entries. He wasn't cheating, I believe, just figuring out what the basic level of work was for the assignment—what he needed to do was simply to avoid failing it. He brought in fewer bugs than most others, though still a number that was acceptable. He also wrote shorter answers in his journal and gave one of the shortest oral reports. It was all acceptable, but not much more than that.

"And Zoey: she was quite a case! I never knew whether to laugh or cry about her. She didn't exactly resist doing the assignment, but she certainly liked to chat with other students. So she was easily distracted, and that cut down on getting her work done, especially about her journal entries. What really saved her—what kept her work at a reasonably high level of quality—were the two girls she ended up chatting with. The other two were already pretty motivated to do a lot with the assignment—create fine looking bug collections, write good journal entries, and make interesting oral

presentations. So when Zoey attempted chitchat with them, the conversations often ended up focusing on the assignment anyway! She had them to thank for keeping her mind on the work. I don't know what Zoey would have done without them."

As Barbara Fuller's recollections suggest, students assign various meanings and attitudes to academic activities—personal meanings and attitudes that arouse and direct their energies in different ways. We call these and their associated energizing and directing effects by the term *motivation*, or sometimes *motivation to learn*. As you will see, differences in motivation are an important source of diversity in classrooms, comparable in importance to differences in prior knowledge, ability, or developmental readiness. When it comes to school learning, furthermore, students' motivations take on special importance because students' mere presence in class is (of course) no guarantee that students really want to learn. It is only a sign that students live in a society requiring young people to attend school (Seifert and Sutton, 2011).

Motivation [1]—the energy or drive that gives behavior direction and focus—can be understood in a variety of ways, each of which has implications for teaching. Since modern education is compulsory, teachers cannot take students' motivation for granted, and they have a responsibility to ensure students' motivation to learn. Somehow or other, teachers must persuade students to want to do what students have to do anyway. This task—understanding and therefore influencing students' motivations to learn—is the focus of this chapter. Fortunately, as you will see, there are ways of accomplishing this task that respect students' choices, desires, and attitudes. Like motivation itself, theories of it are full of diversity.

One perspective on motivation comes from behaviorism, and equates underlying drives or motives with their outward, visible expression in behavior. Most others, however, come from cognitive theories of learning and development. Motives are affected by the kind of goals set by students—whether they are oriented to mastery, performance, failure avoidance, or social contact. They are also affected by students' interests, both personal and situational. And they are affected by students' attributions about the causes of success and failure—whether they perceive the causes are due to ability, effort, task difficulty, or luck.

A major current perspective about motivation is based on self-efficacy theory, which focuses on a person's belief that he or she is capable of carrying out or mastering a task. High self-efficacy affects students' choice of tasks, their persistence at tasks, and their resilience in the face of failure. It helps to prevent learned helplessness, a perception of complete lack of control over mastery or success. Teachers can encourage high self-efficacy beliefs by providing students with experiences of mastery and opportunities to see others' experiences of mastery, by offering well-timed messages persuading them of their capacity for success, and by interpreting students' emotional reactions to success, failure and stress.

An extension of self-efficacy theory is expectancy-value theory, which posits that our motivation for a specific task is a combination of our expectation of success and how important or valuable the task is to us. Yet another related idea is self-determination theory, which is based on the concept that everyone has basic needs for autonomy, competence, and relatedness to others. According to the theory, students will be

1. http://teachingedpsych.wikispaces.com/Selected+Key+Concepts+and+Examples+of+Motivation

motivated more intrinsically if these three needs are met as much as possible. A variety of strategies can assist teachers in meeting these needs.

For convenience in navigating through the diversity of ideas about motivation, we have organized this topic around major theories or perspectives about motives and their sources. We call the modules Goals, Interests and Attributions (Page 4); Self-efficacy (Page 14); and Self-Determination (Page 23). We end with a module, Motivational Challenges in the Classroom (Page 31), which integrates ideas from the major theories, discusses challenges stemming from students' motivation, and offers best practices for fostering students' motivations to learn in positive ways.

1.1 Further Resources

Selected Key Concepts and Examples of Motivation (http://teachingedpsych.wikispaces.com/Selected+Key+Concepts+and+Examples+of+Motivation)

1.2 References

Seifert, K. & Sutton, R. (2011). *Educational psychology*. Retrieved from the Connexions website: http://cnx.org/content/col11302/1.2/

Note: Much of the material from this topic was adapted from (Seifert and Sutton, 2011).

Chapter 2 Goals, Interests and Attributions

2.1 Motives as Goals

One way motives vary is by the kind of goals that students set for themselves, and by how the goals support students' academic achievement. As you might suspect, some goals encourage academic achievement more than others, but even motives that do not concern academics explicitly tend to affect learning indirectly.

2.1.1 Goals that contribute to achievement

What kinds of achievement goals do students hold? Imagine three individuals, Maria, Sara, and Lindsay, who are taking algebra together. Maria's main concern is to learn the material as well as possible because she finds it interesting and because she believes it will be useful to her in later courses, perhaps at university. Hers is a mastery goal because she wants primarily to learn or master the material. Sara, however, is concerned less about algebra than about getting top marks on the exams and in the course. Hers is a performance goal because she is focused primarily on looking successful; learning algebra is merely a vehicle for performing well in the eyes of peers and teachers. Lindsay, for her part, is primarily concerned about avoiding a poor or failing mark. Hers is a performance-avoidance goal because she is not really as concerned about learning algebra, as Maria is, or about competitive success, as Sara is; she is simply intending to avoid failure.

Example

Click Here for a short narrated Powerpoint (http://www.youtube.com/watch?v=rMp_6n0aFwE). This narrated PowerPoint explains the differences between Mastery and Performance Goals, and their influence on student learning and motivation. Click Here to download the narration as a pdf file (http://mikeorey.myweb.uga.edu/epltt/PerformanceMasteryGoals.pdf). By Kim Hardwick, Whitney Powell, and Erika Robinson (2011).

Source: Orey (2010).

As you might imagine, mastery and performance goals often are not experienced in pure form, but in combinations. If you play the clarinet in the school band, you might want to improve your technique simply because you enjoy playing as well as

possible—essentially a mastery orientation. But you might also want to look talented in the eyes of classmates—a performance orientation. Another part of what you may wish, at least privately, is to avoid looking like a complete failure at playing the clarinet. One of these motives may predominate over the others, but they all may be present.

Mastery goals tend to be associated with enjoyment of learning the material at hand, and in this sense represent an outcome that teachers often seek for students. By definition therefore they are a form of *intrinsic motivation*. As such mastery goals have been found to be better than performance goals at sustaining students' interest in a subject. In one review of research about learning goals, for example, students with primarily mastery orientations toward a course they were taking not only tended to express greater interest in the course, but also continued to express interest well beyond the official end of the course, and to enroll in further courses in the same subject (Harackiewicz, et al., 2002; Wolters, 2004).

Performance goals, on the other hand, imply *extrinsic motivation*, and tend to show the mixed effects of this orientation. A positive effect is that students with a performance orientation do tend to get higher grades than those who express primarily a mastery orientation. The advantage in grades occurs both in the short term (with individual assignments) and in the long term (with overall grade point average when graduating). But there is evidence that performance oriented students do not actually learn material as deeply or permanently as students who are more mastery oriented (Midgley, Kaplan, & Middleton, 2001). A possible reason is that measures of performance—such as test scores—often reward relatively shallow memorization of information and therefore guide performance-oriented students away from processing the information thoughtfully or deeply. Another possible reason is that a performance orientation, by focusing on gaining recognition as the best among peers, encourages competition among peers. Giving and receiving help from classmates is thus not in the self-interest of a performance-oriented student, and the resulting isolation limits the student's learning.

2.1.2 Social goals

Most students need and value relationships, both with classmates and with teachers, and often (though not always) they get a good deal of positive support from the relationships. But the effects of social relationships are complex, and at times can work both for and against academic achievement. If a relationship with the teacher is important and reasonably positive, then the student is likely to try pleasing the teacher by working hard on assignments (Dowson & McInerney, 2003). Note, though, that this effect is closer to performance than mastery; the student is primarily concerned about looking good to someone else. If, on the other hand, a student is especially concerned about relationships with peers, the effects on achievement depend on the student's motives for the relationship, as well as on peers' attitudes. Desiring to be close to peers personally may lead a student to ask for help from, and give help to peers—a behavior that may support higher achievement, at least up to a point. But desiring to impress peers with skills and knowledge may lead to the

opposite: as we already mentioned, the competitive edge of such a performance orientation may keep the student from collaborating, and in this indirect way reduce a student's opportunities to learn. The abilities and achievement motivation of peers themselves can also make a difference, but once again the effects vary depending on the context. Low achievement and motivation by peers affects an individual's academic motivation more in elementary school than in high school, more in learning mathematics than learning to read, and more if there is a wide *range* of abilities in a classroom than if there is a more narrow range (Burke & Sass, 2006).

In spite of these complexities, social relationships are valued so highly by most students that teachers should generally facilitate them, though also keep an eye on their nature and their consequent effects on achievement. Many assignments can be accomplished productively in groups, for example, as long as the groups are formed thoughtfully, group tasks are chosen wisely, and all members' contributions are recognized as fully as possible. Relationships can also be supported with activities that involve students or adults from another class or from outside the school, as often happens with school or community service projects. These can provide considerable social satisfaction and can sometimes be connected to current curriculum needs (Butin, 2005). But the majority of students' social contacts are likely always to come from students' own initiatives with each other in simply taking time to talk and interact. The teacher's job is to encourage these informal contacts, especially when they happen at times that support rather than interfere with learning.

2.1.3 Encouraging mastery goals

Even though a degree of performance orientation may be inevitable in school because of the mere presence of classmates, it does not have to take over students' academic motivation completely. Teachers can encourage mastery goals in various ways, and should in fact do so because a mastery orientation leads to more sustained, thoughtful learning, at least in classrooms, where classmates may sometimes debate and disagree with each other (Darnon, Butera, & Harackiewicz, 2006).

How can teachers do so? One way is to allow students to choose specific tasks or assignments for themselves, where possible, because their choices are more likely than usual to reflect prior personal interests, and hence be motivated more intrinsically than usual. The limitation of this strategy, of course, is that students may not see some of the connections between their prior interests and the curriculum topics at hand. In that case it also helps for the teacher to look for and point out the relevance of current topics or skills to students' personal interests and goals.

Suppose, for example, that a student enjoys the latest styles of music. This interest may actually have connections with a wide range of school curriculum, such as:

- biology (because of the physiology of the ear and of hearing)
- physics or general science (because of the nature of musical acoustics)
- history (because of changes in musical styles over time)

- English (because of relationships of musical lyrics and themes with literary themes)
- world languages (because of comparisons of music and songs among cultures)

Still another way to encourage mastery orientation is to focus on students' individual effort and improvement as much as possible, rather than on comparing students' successes to each other. You can encourage this orientation by giving students detailed feedback about how they can improve performance, or by arranging for students to collaborate on specific tasks and projects rather than to compete about them, and in general by showing your own enthusiasm for the subject at hand.

2.2 Motives as interests

In addition to holding different kinds of goals—with consequent differences in academic motivation—students show obvious differences in levels of interest in the topics and tasks of the classroom. Suppose that two high school classmates, Frank and Jason, both are taking chemistry, and specifically learning how to balance chemical equations. Frank finds the material boring and has to force himself to study it; as a result he spends only the time needed to learn the basic material and to complete the assignments at a basic level. Jason, on the other hand, enjoys the challenges of balancing chemical equations. He thinks of the task as an intriguing puzzle; he not only solves each of them, but also compares the problems to each other as he goes through them.

Frank's learning is based on *effort* compared to Jason's, whose learning is based more fully on *interest*. As the example implies, when students learn from interest they tend to devote more attention to the topic than if they learn from effort (Hidi & Renninger, 2006). The finding is not surprising since interest is another aspect of *intrinsic motivation*—energy or drive that comes from within. A distinction between effort and interest is often artificial, however, because the two motives often get blended or combined in students' personal experiences. Most of us can remember times when we worked at a skill that we enjoyed and found interesting, but that also required effort to learn. The challenge for teachers is therefore to draw on and encourage students' interest as much as possible, and thus keep the required effort within reasonable bounds—neither too hard nor too easy.

2.2.1 Situational interest versus personal interest

Students' interests vary in how deeply or permanently they are located within students. *Situational interests* are ones that are triggered temporarily by features of the immediate situation. Unusual sights, sounds, or words can stimulate situational interest. A teacher might show an interesting image on the overhead projector, or play a brief bit of music, or make a surprising comment in passing. At a more abstract level,

unusual or surprising topics of discussion can also arouse interest when they are first introduced. *Personal interests* are relatively permanent preferences of the student, and are usually expressed in a variety of situations. In the classroom, a student may (or may not) have a personal interest in particular topics, activities, or subject matter. Outside class, though, he or she usually has additional personal interests in particular non-academic activities (e.g. sports, music) or even in particular people (a celebrity, a friend who lives nearby). The non-academic personal interests may sometimes conflict with academic interest; it may be more interesting to go to the shopping mall with a friend than to study even your most favorite subject.

2.2.2 Benefits of personal interest

In general, personal interest in an academic topic or activity tends to correlate with achievement related to the topic or activity. As you might suppose, a student who is truly interested is more likely to focus on the topic or activity more fully, to work at it for longer periods, to use more thoughtful strategies in learning—and to enjoy doing so (Hidi, 2001; Hidi & Renninger, 2006). Small wonder that the student achieves more! Note, though, a persistent ambiguity about this benefit: it is often not clear whether personal interest leads to higher achievement, or higher achievement leads to stronger interest. Either possibility seems plausible. Research to sort them out, however, has suggested that at least some of the influence goes in the direction from interest to achievement; when elementary students were given books from which to learn about a new topic, for example, they tended to learn more from books which they chose themselves than from books that were simply assigned (Reynolds & Symons, 2001). So interest seemed to lead to learning. But this conclusion does not rule out its converse, that achievement may stimulate interest as well. As Joe learns more about history, he steadily finds history more interesting; as McKenzie learns more about biology, she gradually wants to learn more of it.

2.2.3 Stimulating situational interests

If a student has little prior personal interest in a topic or activity, the teacher is faced with stimulating initial, situational interest, in hopes that the initial interest will gradually become more permanent and personal. There are a number of strategies for meeting this challenge:

- It helps to include surprises in your comments and in classroom activities from time to time: tell students facts that are true but counter-intuitive, for example, or demonstrate a science experiment that turns out differently than students expect (Guthrie, Wigfield, & Humenick, 2006).
- It also helps to relate new material to students' prior experiences even if their experiences are not related to academics or to school directly. The concepts of gravitation and acceleration, for example, operate every time a ball is hit or

thrown in a softball game. If this connection is pointed out to a student who enjoys playing a lot of softball, the concepts can make concepts more interesting.
- It helps to encourage students to respond to new material actively. By having students talk about the material together, for example, students can begin making their own connections to prior personal interests, and the social interaction itself helps to link the material to their personal, social interests as well.

2.2.4 A caution: seductive details

Even though it is important to stimulate interest in new material somehow, it is also possible to mislead or distract students accidentally by adding inappropriate, but stimulating features to new material (Garner, et al., 1992; Harp & Mayer, 1998). Distractions happen in a number of ways, such as any of these among others:

- deliberately telling jokes in class
- using colorful illustrations or pictures
- adding interesting bits of information to a written or verbal explanation

When well chosen, all of these moves can indeed arouse students' interest in a new topic. But if they do not really relate to the topic at hand, they may simply create misunderstandings or prevent students from focusing on key material. As with most other learning processes, however, there are individual differences among students in distractability, students who are struggling, and are more prone to distraction and misunderstanding than students who are already learning more successfully (Sanchez & Wiley, 2006). On balance the best advice is probably therefore to use strategies to arouse situational interest, but to assess students' responses to them continually and as honestly as possible. The key issue is whether students seem to learn because of stimulating strategies that you provide, or in spite of them.

2.3 Motives related to attributions

Attributions are perceptions about the causes of success and failure. Suppose that you get a low mark on a test and are wondering what caused the low mark. You can construct various explanations for—make various attributions about—this failure. Maybe you did not study very hard; maybe the test itself was difficult; maybe you were unlucky; maybe you just are not smart enough. Each explanation attributes the failure to a different factor. The explanations that you settle upon may reflect the truth accurately—or then again, they may not. What is important about attributions is that they reflect personal beliefs about the sources or causes of success and failure. As such, they tend to affect motivation in various ways, depending on the nature of the attribution (Weiner, 2005).

2.3.1 Locus, stability, and controllability

Attributions vary in three underlying ways: locus, stability, and controllability. **Locus** of an attribution is the location (figuratively speaking) of the source of success or failure. If you attribute a top score on a test to your ability or to having studied hard, then the locus is *internal*; that is, being smart and studying are factors within you. If you attribute the score to the test's having easy questions, then the locus is *external*; in other words, your success is due to something outside of you. The **stability** of an attribution is its relative permanence. If you attribute the score to your ability, then the source of success is relatively *stable*—by definition, ability is a relatively lasting quality. If you attribute a top score to the effort you put in to studying, then the source of success is *unstable*—effort can vary and has to be renewed on each occasion or else it disappears. The **controllability** of an attribution is the extent to which the individual can influence it. If you attribute a top score to your effort at studying, then the source of success is relatively *controllable*—you can influence effort simply by deciding how much to study. But if you attribute the score to simple luck, then the source of the success is *uncontrollable*—there is nothing that can influence random chance.

	Internal	External
Stable	Personal traits Ability Work ethic Study habits	Task difficulty Teacher bias
Unstable	Fatigue Illness Temporary effort (specific to task)	Luck Chance Fate Lack of help Reaction to characteristics of the specific situation

Fig. 2.1: Attributions for Success and Failure Note: Attributions in green are uncontrollable; attributions in purple are controllable. (Weiner, 1992)

As you might suspect, the way that these attributions combine affects students' academic motivations in major ways. It usually helps both motivation and achievement if a student attributes academic successes and failures to factors that are internal and controllable, such as effort or a choice to use particular learning strategies (Dweck, 2000). Attributing successes to factors that are internal but stable or controllable (like ability), on the other hand, is both a blessing and a curse: sometimes it can create optimism about prospects for future success ("I always do well"), but it can also lead to indifference about correcting mistakes (Dweck, 2006), or even create pessimism if a student happens not to perform at the accustomed level ("Maybe I'm not as smart as I thought"). Worst of all for academic motivation are attributions, whether stable or not, related to external factors. Believing that performance depends simply on luck ("The teacher was in a bad mood when marking") or on excessive difficulty of material removes incentive for a student to invest in learning. All in all, then, it seems important for teachers to encourage internal, controllable attributions about success.

2.3.1.1 Influencing students' attributions

How can they do so? One way or another, the effective strategies involve framing teachers' own explanations of success and failure around internal, controllable factors. Instead of telling a student: “Good work! You're smart!”, try saying: “Good work! Your effort really made a difference, didn't it?” If a student fails, instead of saying, “Too bad! This material is just too hard for you,” try saying, “Let's find a strategy for practicing this more, and then you can try again.” In both cases the first option emphasizes uncontrollable factors (effort, difficulty level), and the second option emphasizes internal, controllable factors (effort, use of specific strategies).

Such attributions will only be convincing, however, if teachers provide appropriate conditions for students to learn—conditions in which students' efforts really do pay off. There are three conditions that have to be in place in particular. First, academic tasks and materials actually have to be at about the right level of difficulty. If you give problems in advanced calculus to a first-grade student, the student will not only fail them but also be justified in attributing the failure to an external factor, task difficulty. If assignments are assessed in ways that produce highly variable, unreliable marks, then students will rightly attribute their performance to an external, unstable source: luck. Both circumstances will interfere with motivation.

Second, teachers also need to be ready to give help to individuals who need it—even if they believe that an assignment is easy enough or clear enough that students should not need individual help. Readiness to help is always essential because it is often hard to know in advance exactly how hard a task will prove to be for particular students. Without assistance, a task that proves difficult initially may remain difficult indefinitely, and the student will be tempted to make unproductive, though correct, attributions about his or her failure (“I will never understand this”, “I'm not smart enough”, or “It doesn't matter how hard I study”).

Third, teachers need to remember that ability—usually considered a relatively stable factor—often actually changes *incrementally* over the long term. Recognizing this fact is one of the best ways to bring about actual increases in students' abilities (Blackwell, Trzniewski, & Dweck, 2007; Schunk, Pintrich, & Meese, 2008). A middle-years student might play the trumpet in the school band at a high level of ability, but this ability actually reflects a lot of previous effort and a gradual increase in ability. A second grade student who reads fluently, in this sense may have high current ability to read; but at some point in the distant past that same student could not read as well, and even further back he may not have been able to read at all. The increases in ability have happened at least in part because of effort. While these ideas may seem obvious, they can easily be forgotten in the classroom because effort and ability evolve according to very different time frames. Effort and its results appear relatively immediately; a student expends effort this week, this day, or even at this very moment, and the effort (if not the results) are visible right away. But ability may take longer to show itself; a student often develops it only over many weeks, months, or years.

2.4 Further Resources

Achievement Goals: Overview (http://www.youtube.com/watch?v=rMp_6n0aFwE)

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Chapter 3 Self-efficacy

In addition to being influenced by their goals, interests, and attributions, students' motives are affected by *specific* beliefs about the student's personal capacities. In **self-efficacy theory** the beliefs become a primary, explicit explanation for motivation (Bandura, 1977, 1986, 1997). **Self-efficacy** is an individual's belief that he/she is capable of carrying out a specific task or of reaching a specific goal. Note that the belief and the action or goal are *specific*. Your self-efficacy is your beliefs about whether or not you can write an acceptable term paper, for example, or repair an automobile, or make friends with the new student in class. These are relatively specific beliefs and tasks. Self-efficacy is not about whether you believe that you are intelligent in general, whether you always like working with mechanical things, or think that you are generally a likeable person. These more general judgments are better regarded as various mixtures of *self-concepts* (beliefs about general personal identity) or of *self-esteem* (evaluations of identity). They are important in their own right, and sometimes influence motivation, but only indirectly (Bong & Skaalvik, 2004).

Self-efficacy beliefs, furthermore, are not the same as “true” or documented skill or ability. They are *self*-constructed, meaning that they are personally developed perceptions. There can sometimes therefore be discrepancies between a person's self-efficacy beliefs and the person's abilities. You can believe that you can write a good term paper, for example, without actually being able to do so, and vice versa: you can believe yourself *in*capable of writing a paper, but discover that you *are* in fact able to do so. In this way self-efficacy is like the everyday idea of *confidence*, except that it is defined more precisely. And as with confidence, it is possible to have either too much or too little self-efficacy. The optimum level seems to be either at or slightly above true capacity (Bandura, 1997). As we indicate below, large discrepancies between self-efficacy and ability can create motivational problems for the individual.

3.1 Effects of self-efficacy on students' behavior

Self-efficacy may sound like a uniformly desirable quality, but research as well as teachers' experience suggests that its effects are a bit more complicated than they first appear. Self-efficacy has three main effects, each of which has both a negative or undesirable side and a positive or desirable side.

3.1.1 Choice of tasks

The first effect is that self-efficacy makes students more willing to choose tasks where they already feel confident of succeeding. While this seems intuitive, given the definition of the concept of self-efficacy, it has also been supported by research on self-efficacy beliefs (Pajares & Schunk, 2001). For teachers, the effect on choice can be either welcome or not, depending on circumstances. If a student believes that he or she can solve mathematical problems, then the student is more likely to attempt the mathematics homework that the teacher assigns.

Unfortunately the converse is also true. If a student believes that he or she is *in*capable of math, then the student is *less* likely to attempt the math homework (perhaps telling himself, “What's the use of trying?”), regardless of the student's actual ability in math.

Since self-efficacy is self-constructed, furthermore, it is also possible for students to miscalculate or misperceive their true skill, and the misperceptions themselves can have complex effects on students' motivations. From a teacher's point of view, all is well even if students overestimate their capacity but actually do succeed at a relevant task anyway, or if they underestimate their capacity, yet discover that they *can* succeed and raise their self-efficacy beliefs as a result. All may not be well, though, if students do not believe that they can succeed and therefore do not even try, or if students overestimate their capacity by a wide margin, but are disappointed unexpectedly by failure and lower their self-efficacy beliefs.

3.1.2 Persistence at tasks

A second effect of high self-efficacy is to increase persistence at relevant tasks. If you believe that you can solve crossword puzzles, but encounter one that takes longer than usual, then you are more likely to work longer at the puzzle until you (hopefully) really do solve it. This is probably a desirable behavior in many situations, unless the persistence happens to interfere with other, more important tasks (what if you should be doing homework instead of working on crossword puzzles?). If you happen to have low self-efficacy for crosswords, on the other hand, then you are more likely to give up early on a difficult puzzle. Giving up early may often be undesirable because it deprives you of a chance to improve your skill by persisting. Then again, the consequent lack of success because of giving up may provide a useful incentive to improve your crossword skills. And again, misperceptions of capacity make a difference. Overestimating your capacity by a lot (excessively high self-efficacy) might lead you not to prepare for or focus on a task properly, and thereby impair your performance. So as with choosing tasks, the effects of self-efficacy vary from one individual to another and one situation to another. The teacher's task is therefore two-

fold: first, to discern the variations, and second, to encourage the positive self-efficacy beliefs. The following table offers some additional advice about how to do this.

Strategy	Example of what the teacher might say
1. Set goals with students, and get a commitment from them to reach the goals.	"By the end of the week, I want you to be able to define these 5 terms. Can I count on you to do that?"
2. Encourage students to compare their performance with their own previous performance, not with other students.	"Compare that drawing against the one that you made last semester. I think you'll find improvements!"
3. Point out links between effort and improvement.	"I saw you studying for this test more this week. No wonder you did better this time!"
4. In giving feedback about performance, focus on information, not evaluative judgments.	"Part 1 of the lab write-up was very detailed, just as the assignment asked. Part 2 has a lot of good ideas in it, but it needs to be more detailed and stated more explicitly."
5. Point out that increases in knowledge or skill happen gradually by sustained effort, not because of inborn ability.	"Every time I read another one of your essays, I see more good ideas than the last time. They are so much more complete than when you started the year."

Table 3.1: Ways of encouraging self-efficacy beliefs

Example: Self-Efficacy, Illustrated

This flash animation (http://www.coe.uga.edu/epltt/images/swiftpieefficacy.swf) illustrates the journey of a teacher and student as the student's self-efficacy increases. Sammy has low self-esteem, but his teacher sees a teachable moment in his desire to act and sing. She employs verbal persuasion with positive statements and peer modeling by having Sammy observe another successful classmate who had the same fears. She provides Sammy with specific feedback on his performance, and Sammy has a successful experience in his tryout as a result. By Jim Stewart, Jill Weldon, Celeste Buckhalter-Pittman, and Holly Frilot.

Source: Orey (2010).

3.1.3 Response to failure

High self-efficacy for a task not only increases a person's persistence (p.31) at the task, but also improves their ability to cope with stressful conditions and to recover their motivation following outright failures. Suppose that you have two assignments—an essay and a science lab report—due on the same day, and this circumstance promises to make your life hectic as you approach the deadline. You will cope better with the stress of multiple assignments if you already believe yourself capable of doing both of the tasks, than if you believe yourself capable of doing just one of them or (especially) of doing neither. You will also recover better in the unfortunate event that you end up with a poor grade on one or even both of the tasks.

That is the good news. The bad news, at least from a teacher's point of view, is that the same resilience can sometimes also serve non-academic and non-school purposes. How so? Suppose, instead of two school assignments due on the same day, a student has only one school assignment due, but also holds a part-time evening job as a server in a local restaurant. Suppose, further, that the student has high self-efficacy for both of these tasks; he believes, in other words, that he is capable of completing the assignment as well as continuing to work at the job.

The result of such resilient beliefs can easily be a student who devotes *less* attention to school work than ideal, and who even ends up with a *lower* grade on the assignment than he or she is capable of.

3.1.4 Sources of self-efficacy beliefs

Psychologists who study self-efficacy have identified four major sources of self-efficacy beliefs (Pajares & Schunk, 2001, 2002). In order of importance they are (1) prior experiences of mastering tasks, (2) watching others' mastering tasks, (3) messages or

"persuasion" from others, and (4) emotions related to stress and discomfort. Fortunately the first three can be influenced by teachers directly, and even the fourth can sometimes be influenced indirectly by appropriate interpretive comments from the teacher or others.

3.1.4.1 Prior experiences of mastery

Not surprisingly, past successes at a task increase students' beliefs that they will succeed again in the future. The implication of this basic fact means that teachers need to help students build a history of successes. Whether they are math problems, reading assignments, or athletic activities, tasks have to end with success more often than with failure. Note, though, that the successes have to represent mastery that is genuine or competence that is truly authentic. Success at tasks that are trivial or irrelevant do not improve self-efficacy beliefs, nor does praise for successes that a student has not really had (Erikson, 1968/1994).

As a practical matter, creating a genuine history of success is most convincing if teachers also work to broaden a student's vision of "the past." Younger students (elementary-age) in particular have relatively short or limited ideas of what counts as "past experience;" they may go back only a few occasions when forming impressions of whether they can succeed again in the future (Eccles, et al., 1998). Older students (secondary school) gradually develop longer views of their personal "pasts," both because of improvements in memory and because of accumulating a personal history that is truly longer. The challenge for working with any age, however, is to ensure that students base self-efficacy beliefs on *all* relevant experiences from their pasts, not just on selected or recent experiences.

3.1.4.2 Watching others' experiences of mastery

A second source of efficacy beliefs comes from vicarious *experience of mastery*, or observing others' successes (Schunk & Zimmerman, 1997). Simply seeing someone else succeed at a task, in other words, can contribute to believing that you, too, can succeed. The effect is stronger when the observer lacks experience with the task and therefore may be unsure of his or her own ability. It is also stronger when the model is someone respected by the observer, such as a student's teacher, or a peer with generally comparable ability. Even under these conditions, though, vicarious experience is not as influential as direct experience. The reasons are not hard to imagine.

Suppose, for example, you witness both your teacher and a respected friend succeed at singing a favorite tune, but you are unsure whether you personally can sing. In that case you may feel encouraged about your own potential, but are likely still to feel somewhat uncertain of your own efficacy. If on the other hand you do *not* witness

others' singing, but you have a history of singing well yourself, it is a different story. In that case you are likely to believe in your efficacy, regardless of how others perform.

All of which suggests that to a modest extent, teachers may be able to enhance students' self-efficacy by modeling success at a task or by pointing out classmates who are successful. These strategies can work because they not only show how to do a task, but also communicate a more fundamental message, the fact that the task *can* in fact be done. If students are learning a difficult arithmetic procedure, for example, you can help by demonstrating the procedure, or by pointing out classmates who are doing it. Note, though, that vicarious mastery is helpful only if backed up with real successes performed by the students themselves. It is also helpful only if the "model classmates" are perceived as truly comparable in ability. Overuse of vicarious models, especially in the absence of real success by learners, can cause learners to disqualify a model's success; students may simply decide that the model is "out of their league" in skills and is therefore irrelevant to judging their own potential.

3.1.4.3 Social messages and persuasion

A third source of efficacy beliefs are encouragements, both implied and stated, that persuade a person of his or her capacity to do a task. Persuasion does not create high efficacy by itself, but it often increases or supports it when coupled with either direct or vicarious experience, especially when the persuasion comes from more than one person (Goddard, Hoy, & Hoy, 2004).

For teachers, this suggests two things. The first, of course, is that encouragement can motivate students, especially when it is focused on achievable, specific tasks. It can be motivating to say things like: "I think you can do it" or "I've seen you do this before, so I know that you can do it again." But the second implication is that teachers should arrange wherever possible to support their encouragement by designing tasks at hand that are in fact achievable by the student. Striking a balance of encouragement and task difficulty may seem straightforward, but sometimes it can be challenging because students can sometimes perceive teachers' comments and tasks quite differently from how teachers intend. Giving excessive amounts of detailed help, for example, may be intended as support for a student, but be taken as a lack of confidence in the student's ability to do the task independently.

3.1.4.4 Emotions related to success, stress or discomfort

The previous three sources of efficacy beliefs are all rather cognitive or "thinking oriented," but emotions also influence expectations of success or failure. Feeling nervous or anxious just before speaking to a large group (sometimes even just a class full of students!) can function like a message that says "I'm not going to succeed at doing this," even if there is in fact good reason to expect success. But positive feelings can also raise beliefs about efficacy. When recalling the excitement of succeeding at a

previous, unrelated task, people may overestimate their chances of success at a new task with which they have no previous experience, and are therefore in no position to predict their efficacy.

For teachers, the most important implication is that students' motivation can be affected when they generalize from past experience which they believe, rightly or wrongly, to be relevant. By simply announcing a test, for example, a teacher can make some students anxious even before the students find out anything about the test—whether it is easy or difficult, or even comparable in any way to other experiences called “tests” in their pasts.

Conversely, it can be misleading to encourage students on the basis of their success at past academic tasks if the earlier tasks were not really relevant to requirements of the new tasks at hand. Suppose, for example, that a middle-years student has previously written only brief opinion-based papers, and never written a research-based paper. In that case boosting the student's confidence by telling him that “it is just like the papers you wrote before” may not be helpful or even honest.

3.1.5 Expectancy-Value Theory

By now, it should be clear that motivation is affected by several factors, including reinforcement for behavior, but especially also students' goals, interests, and sense of self-efficacy. The factors combine to create two general sources of motivation: students' expectation of success and the value that students place on a goal. Viewing motivation in this way is often called the expectancy-value model of motivation (Wigfield & Eccles, 2002; Wigfield, Tonk, & Eccles, 2004), and sometimes written with a multiplicative formula: expectancy x value = motivation. The relationship between expectation and value is “multiplicative” rather than additive because in order to be motivated, it is necessary for a person to have at least a modest expectation of success and to assign a task at least some positive value. If you have high expectations of success but do not value a task at all (mentally assign it a “0” value), then you will not feel motivated at all. Likewise, if you value a task highly but have no expectation of success about completing it (assign it a “0” expectancy), then you also will not feel motivated at all. Dr. Eccles explains Expectancy-Value theory in the classroom in this brief article (http://www.education.com/reference/article/expectancy-value-motivational-theory/).

Expectancies are the result of various factors, but particularly the goals held by a student, and the student's self-efficacy. A student with mastery goals and strong self-efficacy for a task, for example, is likely to hold high expectations for success—almost by definition. Values are also the result of various factors, but especially students' interests and feelings of self-determination. A student who has a lasting personal interest in a task or topic and is allowed to choose it freely is especially likely to value the task—and therefore to feel motivated.

Ideally both expectancies and values are high in students on any key learning task. The reality, however, is that students sometimes do not expect success, nor do they

necessarily value it when success is possible. How can a teacher respond to low expectations and low valuing? A number of suggestions to meet this challenge have been offered in conjunction with discussions of other theories of motivation. In brief, raising low expectations depends on adjusting task difficulty so that success becomes a reasonable prospect: a teacher must make tasks neither too hard nor too easy. Reaching this general goal depends in turn on thoughtful, appropriate planning—selecting reasonable objectives, adjusting them on the basis of experience, finding supportive materials, and providing students with help when needed.

Raising the value of academic tasks is equally important, but the general strategies for doing so are different than for raising expectations. Increasing value requires linking the task to students' personal interests and prior knowledge, showing the utility of the task to students' future goals, and showing that the task is valuable to other people whom students respect.

3.1.6 A caution: Motivation as content versus motivation as process

A caution about self-efficacy theory is its heavy emphasis on just the process of motivation, at the expense of the content of motivation. The basic self-efficacy model has much to say about how beliefs affect behavior, but relatively little to say about which beliefs and tasks are especially satisfying or lead to the greatest well-being in students. The answer to this question is important to know, since teachers might then select tasks as much as possible that are intrinsically satisfying, and not merely achievable.

Another way of posing this concern is by asking: “Is it possible to feel high self-efficacy about a task that you do not enjoy?” It does seem quite possible for such a gap to exist. A young child may show some promise as a pianist, for example. Given encouragement (pressure?) from her parents, her successes lead to further practice. She may persist in developing as a pianist, her beliefs in her skills propelling her to commit more and more time to practice and a high level of performance. But, it is possible that this girl does not particularly like playing the piano; perhaps she does it to please her parents. From a motivational perspective, self-efficacy (the girl's confidence in her skills as a pianist) explains her persistence and effort, but does not tell the full story. Accounting for such a gap requires a different theory of motivation, one that includes not only specific beliefs, but “deeper” personal needs as well. An example of this approach is self-determination theory.

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Chapter 4 Self-Determination

Common sense suggests that human motivations originate from some sort of inner "need." We all think of ourselves as having various "needs," a need for food, for example, or a need for companionship—that influences our choices and activities. This same idea also forms part of some theoretical accounts of motivation, though the theories differ in the needs that they emphasize or recognize. Maslow's hierarchy of needs is an example of motivations that function like needs that influence long-term personal development. According to Maslow, individuals must satisfy physical survival needs before they seek to satisfy needs of belonging, they satisfy belonging needs before esteem needs, and so on. In theory, too, people have both deficit needs and growth needs, and the deficit needs must be satisfied before growth needs can influence behavior (Maslow, 1970). In Maslow's theory, as in others that use the concept, a need is a relatively lasting condition or feeling that requires relief or satisfaction and that tends to influence action over the long term. Some needs may decrease when satisfied (like hunger), but others may not (like curiosity). Either way, needs differ from the self-efficacy beliefs, which are relatively specific and cognitive, and affect particular tasks and behaviors fairly directly.

A more recent theory of motivation based on the idea of needs is self-determination theory, proposed by the psychologists Richard Ryan and Edward Deci (2000), among others. The theory proposes that understanding motivation requires taking into account three basic human needs:

- autonomy—the need to feel free of external constraints on behavior, to feel empowered
- competence—the need to feel capable or skilled
- relatedness—the need to belong, to feel connected or involved with others

Note that these needs are all psychological, not physical; hunger and sex, for example, are not on the list. They are also about personal growth or development, not about deficits that a person tries to reduce or eliminate. Unlike food (in behaviorism) or safety (in Maslow's hierarchy), you can never get enough of autonomy, competence, or relatedness. You (and your students) will seek to enhance these continually throughout life. The key idea of self-determination theory is that when persons (such as you or one of your students) feel that these basic needs are reasonably well met, they tend to perceive their actions and choices to be intrinsically motivated or "self-determined." In that case they can turn their attention to a variety of activities that they find attractive or important, but that do not relate directly to their basic needs. Among your students, for example, some individuals might read books that you have suggested, and others might listen attentively when you explain key concepts from the unit that you happen to be teaching. If one or more basic needs are not met well, however, people will tend to feel coerced by outside pressures or external incentives. They may become preoccupied, in fact, with satisfying whatever need has not been

met and thus exclude or avoid activities that might otherwise be interesting, educational, or important. If the persons are students, their learning will suffer.

4.1 Self-determination and intrinsic motivation

In proposing the importance of needs, then, self-determination theory is asserting the importance of intrinsic motivation, an idea that has come up before and that will come again later. The self-determination version of intrinsic motivation, however, emphasizes a person's perception of freedom, rather than the presence or absence of "real" constraints on action. Self-determination means a person feels free, even if the person is also operating within certain external constraints. In principle, a student can experience self-determination even if the student must, for example, live within externally imposed rules of appropriate classroom behavior. To achieve a feeling of self-determination, however, the student's basic needs must be met—needs for autonomy, competence, and relatedness. In motivating students, then, the bottom line is that teachers have an interest in helping students to meet their basic needs, and in not letting school rules or the teachers' own leadership styles interfere with or block satisfaction of students' basic needs.

"Pure" self-determination may be the ideal for most teachers and students, of course, but the reality is usually different. For a variety of reasons, teachers in most classrooms cannot be expected to meet all students' basic needs at all times. One reason is the sheer number of students, which makes it impossible to attend to every student perfectly at all times. Another reason is teachers' responsibility for a curriculum, which can require creating expectations for students' activities that sometimes conflict with students' autonomy or makes them feel (temporarily) less than fully competent.

The result from students' point of view is usually only a partial perception of self-determination, and therefore a simultaneous mix of intrinsic and extrinsic motivations. Self-determination theory recognizes this reality by suggesting that the "intrinsic-ness" of motivation is really a matter of degree, extending from highly *ex*trinsic, through various mixtures of intrinsic and extrinsic, to highly *in*trinsic (Koestner & Losier, 2004). At the extrinsic end of the scale is learning that is regulated primarily by external rewards and constraints, whereas at the intrinsic end is learning regulated primarily by learners themselves. Table 4.1 summarizes and gives examples of the various levels and their effects on motivation. By assuming that motivation is often a mix of the intrinsic and extrinsic, the job of the teacher becomes more realistic; the job is not to expect purely intrinsic motivation from students all the time, but simply to arrange and encourage motivations that are as intrinsic as possible. To do this, the teacher needs to support students' basic needs for autonomy, competence, and relatedness.

Source of regulation of action	Description	Example
"Pure" extrinsic motivation	Person lacks the intention to take any action, regardless of pressures or incentives	Student completes *no* work even when pressured or when incentives are offered
Very external to person	Actions regulated only by outside pressures and incentives, and controls	Student completes assignment *only* if reminded explicitly of the incentive of grades and/or negative consequences of failing
Somewhat external	Specific actions regulated internally, but without reflection or connection to personal needs	Student completes assignment independently, but only because of fear of shaming self or because of guilt about consequences of not completing assignment
Somewhat internal	Actions recognized by individual as important or as valuable as a means to a more valued goal	Student generally completes school work independently, but only because of its value in gaining admission to college
Very internal	Actions adopted by individual as integral to self-concept and to person's major personal values	Student generally completes school work independently, because being well educated is part of the student's concept of himself
"Pure" intrinsic regulation	Actions practiced solely because they are enjoyable and valued for their own sake	Student enjoys every topic, concept, and assignment that every teacher ever assigns, and completes school work solely because of her enjoyment

Table 4.1: Combinations of intrinsic and extrinsic motivation

4.2 Using self-determination theory in the classroom

What are some teaching strategies for supporting students' needs? Educational researchers have studied this question from a variety of directions, and the resulting best practices converge and overlap in a number of ways. For convenience, the best practices can be grouped according to the basic need that they address, beginning with the need for autonomy.

4.2.1 Supporting the need for autonomy

A major part of supporting autonomy is to give students *choices* wherever possible (Ryan & Lynch, 2003). The choices that encourage the greatest feelings of self-control, obviously, are ones that are about relatively major issues or that have relatively significant consequences for students, such as whom to choose as partners for a major group project. But choices also encourage some feeling of self-control even when they are about relatively minor issues, such as how to organize your desk or what kind of folder to use for storing your papers at school. It is important, furthermore, to offer choices to *all* students, including students needing explicit directions in order to work successfully; avoid reserving choices for only the best students or giving up offering choices altogether to students who fall behind or who need extra help. All students will feel more self-determined and therefore more motivated if they have choices of some sort.

Teachers can also support students' autonomy more directly by minimizing external rewards (like grades) and comparisons among students' performance, and by orienting and responding themselves to students' expressed goals and interests. In teaching elementary students about climate change, for example, you can support autonomy by exploring which aspects of this topic have *already* come to students' attention and aroused their concern. The point of the discussion would not be to find out “who knows the most” about this topic, but to build and enhance students' intrinsic motivations as much as possible. In reality, of course, it may not be possible to succeed at this goal fully—some students may simply have no interest in the topic, for example, or you may be constrained by time or resources from individualizing certain activities fully. But any degree of attention to students' individuality, as well as any degree of choice, will support students' autonomy.

4.2.2 Supporting the need for competence

The most obvious way to make students feel competent is by selecting activities which are challenging but nonetheless achievable with reasonable effort and assistance

(Elliott, McGregor, & Thrash, 2004). Although few teachers would disagree with this idea, there are times when it is hard to put into practice, such as when you first meet a class at the start of a school year and therefore are unfamiliar with their backgrounds and interests. But there are some strategies that are generally effective even if you are not yet in a position to know the students well.

One is to emphasize activities that require active response from students. Sometimes this simply means selecting projects, experiments, discussions and the like that require students to do more than simply listen. Other times it means expecting active responses in all interactions with students, such as by asking questions that call for "divergent" (multiple or elaborated) answers. In a social studies class, for example, try asking "What are some ways we could find out more about our community?" instead of "Tell me the three best ways to find out about our community." The first question invites more divergent, elaborate answers than the second.

Another generally effective way to support competence is to respond and give feedback as immediately as possible. Tests and term papers help subsequent learning more if returned, with comments, sooner rather than later. It is important to note that feedback should be substantive and task-specific. It is not enough to write, "Good job! A-" on a student's paper, although the student would likely be happy to see it. Compare "Nice work!" with "Your use of descriptive language really engages the reader!" or "Try writing out the formula you need for the problem as soon as you read it—this will help ensure you include all of the steps." Task-specific feedback gives students information about what they did well and what they could improve upon. It keeps the focus on mastery, rather than performance, and guides their future endeavors.

In the same vein, discussions facilitate more learning if you include your own ideas in them, while still encouraging students' input. Small group and independent activities are more effective if you provide a convenient way for students to consult authoritative sources for guidance when needed, whether the source is you personally, a teaching assistant, a specially selected reading, or even a computer program. In addition, you can sometimes devise tasks that create a feeling of competence because they have a "natural" solution or ending point. Assembling a jigsaw puzzle of the community, for example, has this quality, and so does *creating* a jigsaw puzzle of the community if the students need a greater challenge.

4.2.3 Supporting the need to relate to others

The main way of support students need to relate to others is to arrange activities in which students work together in ways that are mutually supportive, that recognize students' diversity, and minimize competition among individuals. Having students work together can happen in many ways. You can, for example, deliberately arrange projects that require a variety of talents; some educators call such activities "rich group work" (Cohen, 1994; Cohen, Brody, & Sapon-Shevin, 2004). In studying in small groups about medieval society, for example, one student can contribute his drawing

skills, another can contribute his writing skills, and still another can contribute his dramatic skills. The result can be a multi-faceted presentation—written, visual, and oral. The groups needed for rich group work provide for students relationships with each other, whether they contain six individuals or only two.

There are other ways to encourage relationships among students. In the jigsaw classroom (Aronson & Patnoe, 1997), for example, students work together in two phases. In the first phase, groups of "experts" work together to find information on a specialized topic. In a second phase the expert groups split up and reform into "generalist" groups containing one representative from each former expert group. In studying the animals of Africa, for example, each expert group might find information about a different particular category of animal or plant; one group might focus on mammal, another on bird, a third on reptiles, and so on. In the second phase of the jigsaw, the generalist groups would pool information from the experts to get a more well-rounded view of the topic. The generalist groups would each have an expert about mammals, for example, but also an expert about birds and about reptiles.

As a teacher, you can add to these organizational strategies by encouraging the development of your own relationships with class members. Your goal, as teacher, is to demonstrate caring and interest in your students not just as students, but as people. The goal also involves behaving as if good relationships between and among class members are not only possible, but ready to develop and perhaps even already developing. A simple tactic, for example, is to speak of "we" and "us" as much as possible, rather than speaking of "you students." Another tactic is to present cooperative activities and assignments without apology, as if they are in the best interests not just of students, but of "us all" in the classroom, yourself included.

4.3 Keeping self-determination in perspective

In certain ways self-determination theory provides a sensible way to think about students' intrinsic motivation and therefore to think about how to get them to manage their own learning. A particular strength of the theory is that it recognizes *degrees* of self-determination and bases many ideas on this reality. Most people recognize combinations of intrinsic and extrinsic motivation guiding particular activities in their own lives. We might enjoy teaching, for example, but also do this job partly to receive a paycheck. To its credit, self-determination theory also relies on a list of basic human needs—autonomy, competence, and relatedness—that relate comfortably with some of the larger purposes of education. Although these are positive features for understanding and influencing students' classroom motivation, some educators and psychologists nonetheless have lingering questions about the limitations of self-determination theory. One is whether merely providing choices actually improves students' learning, or simply improves their *satisfaction* with learning. There is evidence supporting both possibilities (Flowerday & Schraw, 2003; Deci & Ryan, 2003), and it is likely that there are teachers whose classroom experience supports both possibilities as well.

Another question is whether it is possible to *overdo* attention to students' needs—and again there is evidence for both favoring and contradicting this possibility. Too many choices can actually make anyone (not just a student) frustrated and dissatisfied with a choice the person actually *does* make (Schwartz, 2004). Clearly the number of choices given must be developmentally appropriate: adolescents can handle far more choices than can kindergartners. Furthermore, differentiating activities to students' competence levels may be challenging if students are functioning at extremely diverse levels within a single class, as sometimes happens. These are serious concerns, though in our opinion *not* serious enough to give up offering choices to students or to stop differentiating instruction altogether. In "Motivational Challenges in the Classroom (Page 31)," therefore, we explain the practical basis for this opinion, by describing workable ways for offering choices and recognizing students' diversity.

4.4 Further Resources

Fostering Children's Motivation to Learn: A Guide for Teachers (http://www.temple.edu/lss/pdf/partnerships/lss_partnerships114.pdf)

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Chapter 5 Motivational Challenges in the Classroom

In this module, we examine motivational challenges in the classroom. As you will soon see, many of these challenges are related to individuals' confidence in their abilities to succeed. Recognizing motivational problems as they arise, and intervening early, will help reduce the likelihood that such problems will endure. Thus, we consider evidence-based practices to minimize the challenges, so that we can support our students' success.

5.1 Self-handicapping

Sometimes students' motivational goals actually undermine academic achievement. Often they are a negative byproduct of the competitiveness of performance goals (Urdan, 2004). If teachers (and sometimes also fellow students) put too much emphasis on being the best in the class, and if interest in learning the material therefore suffers, then some students may decide that success is beyond their reach or may not be desirable in any case. The alternative—simply avoiding failure—may seem wiser as well as more feasible. Once a student adopts this attitude, he or she may underachieve more or less deliberately, doing only the minimum work necessary to avoid looking foolish or to avoid serious conflict with the teacher. Operating this way is a form of self-handicapping—deliberate actions and choices that reduce the chances of success. Students may self-handicap in a number of ways; in addition to not working hard, they may procrastinate about completing assignments, for example, or set goals that are unrealistically high. Another self-handicapping strategy is to become involved in too many other activities or place undue importance on other tasks. The main idea here is that self-handicapping allows individuals to attribute their failure to factors *other than their own ability*. Blaming my poor performance on the project on the fact that I'm really busy is less damaging to my self-esteem than blaming my performance on the fact that I didn't really understand the concepts.

5.2 Procrastination

As just mentioned, procrastination can be a form of self-handicapping, but people procrastinate for many reasons beyond protecting their sense of self-worth. And it is not always deliberate. Students might be overwhelmed by the complexity of a significant paper or project, for example, and not know how to get started. Others

may experience anxiety over the sheer quantity of work they have to get done, and this may lead to a kind of paralysis. Still others may be completely bored by the task.

Teachers can help students overcome procrastination and other types of self-handicapping by tackling the problem head on. Scanning the classroom a few minutes after assigning a worksheet will reveal students who are not working. Wise teachers also build in early check-points for longer term projects in order to uncover problems before they become too large. Like many self-defeating behaviors, acknowledging responsibility for self-handicapping is an important first step. Next comes an exploration for why students are undermining their own successes. Understanding the underlying reasons helps identify the approaches that will be most effective.

5.3 Learned helplessness

Learned helplessness has roots in self-efficacy as well as attribution theory. If a person's sense of self-efficacy is very low over repeated experiences, he or she can develop *learned helplessness*, a perception of complete *lack* of control in mastering a task. The attitude is similar to depression, a pervasive feeling of apathy and a belief that effort makes no difference and does not lead to success. Learned helplessness was originally studied from the behaviorist perspective of classical and operant conditioning by the psychologist Martin Seligman (1995). The studies used a somewhat “gloomy” experimental procedure in which an animal, such as a rat or a dog, was repeatedly shocked in a cage in a way that prevented the animal from escaping the shocks. In a later phase of the procedure, conditions were changed so that the animal could avoid the shocks by merely moving from one side of the cage to the other. Yet frequently they did not bother to do so! Seligman called this behavior *learned helplessness*. Click here (http://www.youtube.com/watch?v=MTqBP-x3yR0) for a short demonstration of inducing learned helplessness in the classroom.

In people, learned helplessness leads to characteristic ways of dealing with problems. They tend to attribute the source of a problem to themselves, to generalize the problem to many aspects of life, and to see the problem as lasting or permanent; in other words, an internal, stable attribution of failure. More optimistic individuals, in contrast, are more likely to attribute a problem to outside sources, to see it as specific to a particular situation or activity, and to see it as temporary or time-limited. Consider, for example, two students who each fail a test. The one with learned helplessness is more likely to explain the failure by saying something like: “I'm stupid; I never do well on any schoolwork, and I never will.” The other, more optimistic student is more likely to say something like: “I failed this test because I didn't study hard enough; I can study harder next time.” Note that the latter example implies that there are factors within one's control that can be adjusted in the future.

5.4 Overcoming motivational challenges related to self-efficacy and control

Self-handicapping, learned helplessness, and some types of procrastination stem from an underlying perception of low competence as well as the feeling that they don't have much control over their circumstances. Teachers can minimize these challenges in students by encouraging their sense of self-efficacy as well as their sense of control over factors that can influence their success.

Here are some best practices to support students' needs for autonomy and competence, and help encourage students' positive sense of self-worth:

- Have students keep a journal, noting their procrastination and other self-handicapping behaviors and reflecting on their reasons. The goal is to help students better recognize when they are sabotaging themselves, so that they are more likely to stop.
- Model effective "procrastination busters." When assigning larger tasks, break them into smaller ones, and eventually teach students how to do this themselves. Dividing a research project into several stages, with deadlines along the way, encourages students to focus on each stage, rather than the whole project (Schubert Walker, 2000). See also "Supporting the need for competence (Page 26)."
- Teach self-regulation strategies, such as time management, organizational skills, and self-motivation. For example, have students set up a timeline, then reward themselves for completing tasks by the scheduled deadline. The use of self-regulation promotes a sense of control, an important factor in minimizing procrastination (Cleary & Zimmerman, 2004).
- Help students adopt a mastery orientation. Reduce students' anxiety over being evaluated by focusing their efforts on mastery goals (Schubert Walker, 2000). Research suggests that students who engage in tasks in order to learn as much as they can, or because the task is interesting or optimally challenging, are more likely to give appropriate effort and persist to completion (Ryan & Deci, 2000).
- Don't allow students who exhibit learned helplessness to give up. Instead, adjust the difficulty of learning tasks so that students have a realistic chance to master them. Provide support and encouragement until they succeed. Most importantly, attribute their successes to internal attributions such as effort, persistence, and resourcefulness (Weiner, 2005).
- Whenever possible, minimize boredom-related procrastination by connecting assignments to students' personal interests. In addition, teach students to find the interesting aspects, or to find ways to make it interesting or challenging. Because students are more likely to stick with tasks—even boring ones—when they know they are important, help students see the value of what they are learning with the task (Ryan & Deci, 2000). See also "Supporting the need for autonomy (Page 26)."

5.5 Perfectionism

Students who tend to be perfectionists, like those who exhibit learned helplessness, are motivated by an aversion to failure. Research suggests a continuum of perfectionist tendencies, ranging from healthy to dysfunctional (Christopher, 2010). While a healthy dose of perfectionism can drive individuals towards great accomplishments, dysfunctional perfectionists set unrealistic goals, are overly sensitive to critique, and can become paralyzed by their fear of failure.

Many of the approaches to reducing students' tendencies towards perfectionism are similar to those designed to help students who show learned helplessness and self-handicapping.

- Help students set challenging, yet achievable goals. Realistic goal setting is important to cultivate for all students; perfectionist students need positive support while developing this skill.
- Focus evaluative feedback on the product, rather than the person. Remind perfectionists that feedback is an important tool in the quest for mastery. Ask them to use the feedback to set goals for future performance. See also "Supporting the need for competence (Page 26)."
- When students are devastated by a less than perfect performance, encourage them to list as many positive aspects of the performance as they can. Help them see that 'less than perfect' does not equal 'failure.'

(University of Texas at Austin Counseling and Mental Health Center, 2012).

5.6 Disengagement

Perhaps the most challenging situation in the classroom is working with students who are alienated or disaffected from the learning process (Brophy, 1998). Disengagement is characterized by apathy, lack of effort, avoidance—when possible—and frustration or noncompliance when avoidance is not an option (Skinner, Kinderman, & Furrer, 2009). Although the reasons for disengagement vary, it is important for teachers to strive to reconnect the student to learning and to school.

- Foster a sense of belonging in the classroom. Develop positive, supportive relationships with disengaged students, even when they seem to resist. Students who believe that their teacher cares about them and who feel connected to the classroom community are more likely to adopt positive classroom behaviors, such as effort and persistence (Ryan & Deci, 2000).
- Strive to connect learning with students' interests. While boredom can be a factor in procrastination (Procrastination (Page 31)), it also leads to disengagement.

Getting to know students' background, interests, hobbies, etc. will help create opportunities for developing meaningful, relevant learning experiences.

- Help students to take responsibility for their actions, and to attribute their successes and failures to factors within their control. Teach them to find (or create) challenges in order to make the task more engaging (Brophy, 1998).

Teachers will encounter many challenges as they seek to foster students' motivation to learn. Drawing on theories of motivation, research points us toward effective ways to tackle the challenges.

5.7 Further Resources

Self-Handicapping (http://www.education.com/reference/article/self-handicapping/)

Learned Helplessness: Why Bother? (http://www.emotionalcompetency.com/helpless.htm)

Dealing with Perfectionism (http://psychcentral.com/blog/archives/2009/05/11/10-steps-to-conquer-perfectionism/)

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Chapter 6 Key Terms and Definitions

Attribution : beliefs or perceptions about the causes of success and failure.

Autonomy : the psychological need to feel free of external constraints on behavior, to feel empowered.

Competence : the psychological need to feel capable or skilled.

Extinction : the tendency for learned behaviors to become less likely to continue when reinforcement no longer occurs.

Extrinsic motivation : the drive to act based on factors external to the person (e.g., a promise of reward, potential recognition, the threat of punishment).

Intrinsic motivation : the drive to act based on factors internal to the person (e.g., being interested in the task, feeling optimally challenged, personally valuing the task).

Mastery goals : reasons for engaging in an action that involve self-improvement (e.g., studying hard in order to learn as much as you can).

Operant conditioning : changing the odds of a behavior recurring. According to behavioral theory, behavior can be strengthened (more likely to recur) by reinforcements, such as rewards, praise, or removing an unpleasant condition; behavior can be weakened (less likely to recur) by punishment, such as withdrawal of approval or adding an unpleasant condition.

Performance goals : reasons for engaging in an action that involve demonstrating competence (e.g., studying hard in order to show others that you are smart).

Performance-avoidance goals : reasons for engaging in an action that involve not demonstrating incompetence.

Persistence : to continue despite difficulty or obstacles.

Personal interest : an interest that is relatively stable (more enduring than situational interest) and due to factors within the person. Examples of personal interest include being drawn to write an essay because it's related to a hobby of yours, and studying the music of a historical era because you play the piano.

Relatedness : the psychological need to belong, to feel connected or involved with others.

Self-determination : free choice of one's own acts or states without external coercion.

Self-efficacy : an individual's belief that he/she is capable of carrying out a specific task or of reaching a specific goal.

Self-handicapping : occurs in evaluative situations in which the person does not believe she will succeed; it is thought to enable the person to blame failure on factors other than his own ability.

Self-regulation : the development of a set of adaptive behaviors that positively affect one's learning or behavior. Examples of self-regulated learning strategies include periodically stopping myself during reading to check if I understood what I just read, organizing my workspace so I have everything I need to complete the task, and rewarding myself for accomplishing steps in a project.

Situational interest : an interest that is temporarily triggered by features of the immediate situation. Examples of situational interest include being drawn to a powerpoint presentation by the animation and bright colors, enjoying working on an assignment because you can work with a partner.

Vicarious : performed by one person to the benefit of another. Vicarious learning involves being able to learn from watching someone else do the task.

Index of Keywords and Terms

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