MODULE 15

COGNITIVE THEORIES

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Outline	Learning Goals
Cognitive Theories of Motivation	
• Expectancy-Value Theory	❶ Define expectancies and values and explain how they influence students' motivation.
• Goal Theory	
• Attribution Theory	❷ Compare and contrast the two types of mastery and performance goals.
	❸ Identify attributions that enhance motivation and those that lower motivation.
Developmental and Cultural Differences in Motivation	
• Developmental Changes in Motivation	❹ Explain the major developmental changes in motivation.
• Gender Differences in Motivation	❺ Identify gender and ethnic differences in motivation.
• Ethnic Differences in Motivation	
Serious Motivational Problems	
• Learned Helplessness	❻ Explain how learned helplessness and anxiety affect students' motivation to learn.
• Anxiety	
Applications: Enhancing Students' Motivation	
• Student-Level Techniques	❼ Identify student-level and classroom-level strategies for enhancing motivation.
• Classroom-Level Techniques	

Cognitive Theories of Motivation

1	Define expectancies and values and explain how they influence students' motivation.

2	Compare and contrast the two types of mastery and performance goals.

3	Identify attributions that enhance motivation and those that lower motivation.

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What does *thinking* have to do with motivation? According to cognitive theories of motivation, changing students' motivation to learn requires changing the way they think. To do this, we need to understand students' expectations for success and valuing of learning tasks, their goals for learning activities, and their attributions (or explanations) for their successes and failures. In this module, we discuss these theories:

- Expectancy-value theory

- Goal theory

- Attribution theory

But before we discuss *how* to motivate student learning, let's review *what* motivation is. When students study for a test to get a good grade, they are exhibiting **extrinsic motivation**, which focuses on external rewards for their behavior. When students study out of interest or enjoyment, they show **intrinsic motivation**, in which learning is the reward itself. And some learning may be prompted by both, as when a student wants a good grade (extrinsic motivation) *and* enjoys the subject matter (intrinsic motivation).

Our goal as teachers is to foster **academic intrinsic motivation**, in which students exhibit curiosity and persistence and focus on mastery of knowledge and skills (Gottfried,

Fleming, & Gottfried, 1994; Gottfried & Gottfried, 1996). From elementary school through high school, students with high academic intrinsic motivation have positive views of their ability, display lower anxiety and greater persistence, and show deeper learning and higher achievement than students with lower academic intrinsic motivation (Gottfried, Fleming, & Gottfried, 2001; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004). To encourage academic intrinsic motivation in all students, we first need to understand the thinking that underlies students' motivation. Let's begin with expectancy-value theory.

> What factors motivate you to succeed in school? Reflect on these factors as you read about the motivational theories.

Expectancy-Value Theory

What motivates students to participate in class, study, or complete homework assignments and projects? According to the expectancy-value model, the answer involves two components (Eccles, 2005; Wigfield & Eccles, 2000, 2002):

1. **Expectancy**: Students' expectation for success (Can I do this task?)
2. **Value**: Reasons for undertaking a task (Why should I want to do this task?)

Expectancies and values are related to each other. Individuals tend to value what they are good at (Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002; Wigfield et al., 1997). Expectancies and values also predict motivational behaviors, such as choice of activities as well as performance, effort, and persistence on activities (Wigfield et al., 2015; Wigfield, Tonks, & Klauda, 2009).

Expectancies. Students have different expectancies for success. Some children and adolescents with positive expectancies believe that they can succeed on a task when they are presented with a new challenge, while others with negative expectancies believe that they are likely to fail. Expectancy depends on the student's **competency belief**, a judgment about one's relative ability in one domain compared to the ability of other individuals and compared to one's ability in other domains (Eccles et al., 1983). For example, a student may say, "Math is my strongest subject, and I am better at it than my friends." Competency beliefs are determined by past experiences, our interpretations of those experiences (why we think we've succeeded or failed), and social and cultural factors, such as parental beliefs and gender-role stereotypes (e.g., the idea that males are better at math and females are better at reading; Eccles, 2005; Wigfield & Cambria, 2010a). Note that competency belief differs from an individual's sense of self-efficacy. Self-efficacy is a belief about a particular task and does not involve a comparison of one's ability to others' ability or to one's ability in other skill areas (Wigfield & Cambria, 2010a).

Self-efficacy:
See Module 16

Values. Why do students choose to complete academic tasks? Individuals may choose to engage in tasks because of their

- **Intrinsic value**—satisfying interest, curiosity, or enjoyment (completing a science project because the topic is interesting)
- **Attainment value**—the *intrinsic* importance of being good at a task for one's own identity (studying spelling words to be a good speller)

- **Utility value**—*extrinsic* usefulness for meeting short-term and long-term goals (choosing to take calculus to prepare for college)

Ideally, we want students to engage in tasks for intrinsic reasons (intrinsic or attainment value). However, even though utility value provides an extrinsic reason for undertaking tasks, it also has motivational benefits. Students who consider academic tasks to have high utility value show greater effort and achievement compared to those with lower value for the tasks (Cole, Bergin, & Whittaker, 2008; Hulleman, Durik, Schweigert, & Harackiewicz, 2008; Malka & Covington, 2005).

Students also might choose to engage in tasks or to avoid tasks because of their **cost**, or the expense of engaging in the activity. A cost may be the amount of effort needed to complete a task, time away from other activities (e.g., going to the mall), or psychological risks, such as anxiety, fear of failure, or social consequences of success (e.g., being labeled a *nerd*).

Many factors influence how we value a task (Wigfield, Eccles, Schiefele, Roeser, & Davis-Kean, 2006). For example, a high school girl may decide to take calculus because she likes math (intrinsic value), is good at it (attainment value), and needs it for college (utility value). She has developed these values based on her view of herself (self-schema), long- and short-term goals, competency beliefs about math, and past experiences. Her parents' beliefs about math and their expectations for her success, as well as gender roles and cultural stereotypes, are environmental factors that also affect task values (Wigfield et al., 2015). Parents' values and expectancies for their child's success are related to adolescents' valuing of many school subjects (Simpkins, Fredricks, & Eccles, 2012).

The values students ascribe to academic tasks or subjects influence their achievement-related choices. For example, the value elementary school students place on reading, math, and science is predictive of the number of courses they will choose in high school in English, math, and science, respectively (Durik, Vida, & Eccles, 2006; Simpkins, Davis-Kean, & Eccles, 2006). Values are also related to adolescents' achievement-related choices, such as course selection decisions, involvement in sports, occupational choices, and anticipated college major (Eccles, Wigfield, & Schiefele, 1998; Simpkins et al., 2012).

Goal Theory

Individuals form goals for a variety of academic and nonacademic pursuits. An **achievement goal** includes both (a) the reason for undertaking a task and (b) the standard that individuals construct to evaluate their performance (Ames, 1992; Pintrich, 2000). For example, an adolescent may decide to earn better grades to get into college and may decide that this means earning Bs in all classes. Our *goal orientation,* or what drives our behaviors and choices, can be described by two types of mastery goals and two types of performance goals, as shown in Table 15.1.

Mastery-approach goals and performance-approach goals are grounded in a need for achievement. Students with these goals are motivated to approach situations in which they have an opportunity to achieve. Students with **mastery-approach goals** focus on improving intellectually, acquiring new skills and knowledge, and developing competence (Elliot & Murayama, 2008; Hulleman & Senko, 2010). Students who hold **performance-approach goals** are motivated simultaneously by a need to achieve and a fear of failure (Elliot & McGregor, 2001; Vansteenkiste, Lens, Elliot, Soenens, & Mouratidis, 2014). Because these students fear failure and have perceptions of low ability, their goal is to demonstrate their ability to others and outperform others (Hulleman et al., 2010; Urdan & Mestas, 2006).

Mastery-approach and performance-approach goal orientations result in positive outcomes such as persistence and effort (Hulleman, Schrager, Bodmann, & Harackiewicz,

Comparing Mastery and Performance Orientations

	Mastery	Performance
Approach state	Focus: mastering task, learning, understanding Standards: self-improvement, progress, deep understanding of task Outcomes: • intrinsic motivation, interest, enjoyment • deep-level learning strategies to enhance understanding and recall • preference for challenging tasks and moderate risk-taking • adaptive help seeking • effort and persistence • positive self-efficacy and self-regulation	Focus: being superior, being the smartest, besting others Standards: getting best or highest grades, being best performer in class (comparing to the norm) Outcomes: • intrinsic motivation • effective, but often superficial, learning strategies (e.g., rote memorization) • effort and persistence • low anxiety and positive self-efficacy • acceptance of cheating
Avoidance state	Focus: avoiding misunderstanding, avoiding not learning or not mastering task Standards: not being wrong, not performing incorrectly relative to task Outcomes: • disorganized studying • increased test anxiety • negative feelings about failure • avoidance of help seeking • less intrinsic motivation and interest • lower performance	Focus: avoiding inferiority, not looking stupid or dumb in comparison to others Standards: not getting the worst grades, not being lowest performer in class (comparing to the norm) Outcomes: • surface-level learning strategies (e.g., memorizing, studying only what is likely to be on the test) • disorganized study habits • self-handicapping strategies (e.g., not trying, procrastinating, minimizing participation, making excuses for incomplete work, possibly cheating) • anxiety and negative feelings about failure • avoidance of help seeking • disengagement • lower performance

Sources: Anderman et al., 2009; Cury et al., 2006; Daniels et al., 2008; Darnon, Butera, Mugny, Quiamzade, & Hulleman, 2009; Elliot & Church, 1997; Elliot, McGregor, & Gable, 1999; Elliot & Moller, 2003; Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002; Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000; Hulleman & Senko, 2010; Hulleman, Schrager, Bodmann, & Harackiewicz, 2010; Jansen, 2006; Karabenick, 2003; Leondari & Gonida, 2007; Maatta & Nurmi, 2007; Middleton & Midgley, 1997; Moller & Elliot, 2006; Murayama & Elliot, 2009; Payne, Youngcourt, & Beaubien, 2007; Roll and, 2012; Valentiner, Mounts, Durik, & Gier-Lonsway, 2011; Van Yperen, Blaga and Postmes, 2014.

2010; Hulleman & Senko, 2010). Performance-approach goals are often linked to students' use of superficial learning strategies, such as memorizing, although this behavior nonetheless results in achievement most of the time. However, mastery-approach goals are not always linked to high achievement despite the use of deep-level learning strategies, such as planning and organizing material, relating information to prior knowledge, and monitoring comprehension while learning (Hulleman et al., 2010; Senko, Hama, & Belmonte, 2013). Particularly in elementary school, where there is an emphasis on learning factual knowledge, deeper processing may not be the most adaptive approach for mastery-oriented students who are high achieving (Rončević & Kolić-Vehovec, 2014).

While some individuals may be motivated to *approach* achievement situations, others may be motivated to *avoid* situations that may lead to failure. Students with **mastery-avoidance goals** want to avoid situations in which they might fail to achieve mastery. They judge their competence by personally created, absolute standards, such as avoiding a strikeout when coming up to bat or avoiding the possibility of answering a question incorrectly. The mastery-avoidant behaviors of setting high personal standards

and never wanting to be wrong or incorrect are characteristics of perfectionists (Damian, Stoeber, Negru, & Baban, 2014; Fletcher, Shim, & Wang, 2012). In contrast, students with **performance-avoidance goals** are concerned with judging their competence relative to others, such as failing a test they believe others will succeed on (Elliot & McGregor, 2001). To avoid failure, these students use self-handicapping strategies such as those listed in Table 15.1, which are a useful way to attribute failure to causes other than low ability, leading to less shame (Török, Szabó, & Tóth, 2018).

Attribution Theory

Think about a time when you studied for a test and were surprised to find out that you received a lower grade than expected. What caused this outcome? According to attribution theory, we all try to explain our performance through **causal attributions**, interpretations of events based on past performance and social norms (Weiner, 2010). To better understand how attributions influence students' motivation, consider the three dimensions of attributions:

1. **Locus**: where we place the cause of the outcome. Do we believe our success or failure results from *internal* causes, such as ability and effort, or due to *external* causes, such as asking the teacher for help? Compared to external attributions, ability and effort attributions for success lead to higher levels of pride, confidence, satisfaction, and self-esteem (Graham & Weiner, 1996).

2. **Stability**: whether we perceive the cause as being stable or unstable over time. We expect future success when we attribute success to a *stable* cause (the typical effort you make every time you study). However, our expectation decreases when we attribute failure to a stable cause, such as our belief that a teacher's tests are too difficult (Weiner, 1982). Our expectations for future success are not hampered when we attribute failure to an *unstable* cause—say, missing several classes because of illness.

3. **Controllability**: our personal responsibility for the cause of the success or failure. Was success or failure *controllable* (the amount you studied) or *uncontrollable* (unfairness of the test)? Attributing success or failure to amount of effort generally leads to positive expectations for future performance because we believe that effort is under our control (Weiner, 1994). Our future motivation is not likely to be affected by attributing success to uncontrollable causes, such as luck. However, when we attribute failure to uncontrollable causes, such as believing we have low ability that cannot improve, we might experience shame and avoid situations that may lead to failure (Covington & Omelich, 1984a; Graham & Weiner, 1996).

Figure 15.1 shows common attributions students make and characterizes them according to locus, stability, and controllability. Two students who get the same grade on the same test might make completely different attributions for their performance. The attributions we make are affected not only by our own beliefs about our ability but also by the evaluations others make about our academic performance. Let's examine these two factors next.

Beliefs About Ability. Attributing success and failure to ability has different effects on motivation, depending on our belief about ability.

Performance-Approach Goals. Some students are motivated to show others their ability, like the boy showing off his soccer trophy.
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Locus, Stability, and Controllability Dimensions of Attributions. Students can make different attributions for past successes and failures, each of which has a different effect on their future motivation.
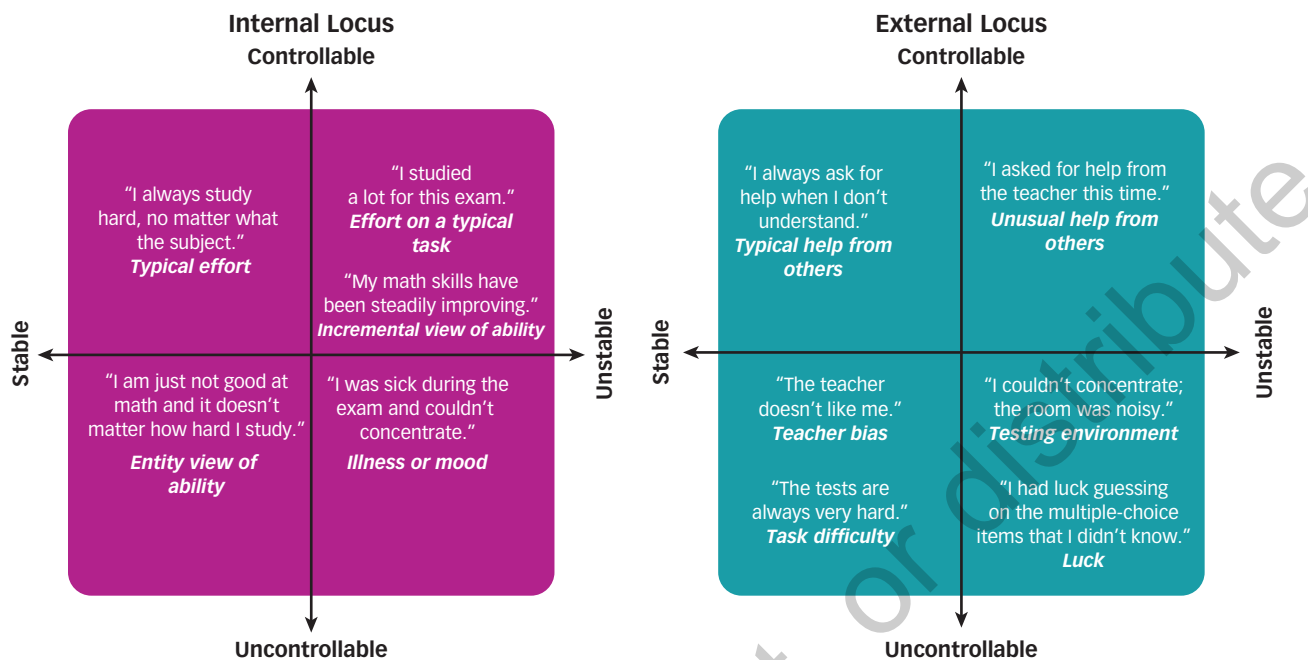
Individuals with an **incremental view of ability**, or *growth mindset*, perceive ability as unstable and controllable; they consider it to be ever-changing (Dweck & Leggett, 1988; Haimovitz & Dweck, 2017). When students with an incremental view attribute success to their ability, they will be motivated to continue to improve their knowledge and skills. When they attribute failure to low ability, they will become motivated to find alternative strategies for succeeding next time.

Students with an **entity view of ability**, or *fixed mindset*, believe that ability is stable and uncontrollable; they see it as fixed and unchangeable (Dweck, 2000; Haimovitz & Dweck, 2017). Individuals with an entity view are motivated by gaining favorable judgments or avoiding negative judgments of their ability (Haimovitz, Wormington, & Corpus, 2011). When such students experience success, they want to continue to demonstrate their competence if they believe that competence is valued by others, such as teachers and peers (Stipek, 2002). When they attribute failure to lack of ability, their expectations for future success diminish, negatively affecting their motivation to learn (Haimovitz et al., 2011; Hong, Chiu, Dweck, Lin, & Wan, 1999).

For students with an entity view, preventing a negative impression of their ability is more important than actually succeeding (Dweck & Master, 2008). When they experience failure, they often engage in self-handicapping behaviors, such as not trying, procrastinating, and making excuses, which further undermine their performance (Cury, Elliot, Da Fonseca, & Moller, 2006). Because students with an entity view believe that exerting effort indicates a lack of ability, they tend to use lack of effort as an excuse for failure ("I failed because I didn't study"), which suggests to others that lack of effort is the reason for failure, not low ability (Blackwell, Trzesniewski, & Dweck, 2007; Hong et al., 1999). Making low-effort excuses can result in more peer approval, especially during adolescence when being popular and minimizing the importance of effort go hand in hand (Juvonen, 2000).

Self-handicapping behaviors: See Module 16

Teacher Behaviors and Students' Beliefs About Ability. Teachers' behaviors in the classroom can affect students' beliefs about ability and their resulting motivation. Teachers who use performance-oriented, competitive approaches, such as emphasizing grades, grouping students by ability, and emphasizing social comparisons when evaluating or praising students, tend to have students with an entity view of ability (Park, Tsukayama, Gunderson, Levine, & Beilock, 2016; Sun, 2018). In contrast, teachers who promote an incremental view of ability in students use practices such as focusing on mastery and meaningful learning, using process praise, allowing students to revise work, and emphasizing the importance of struggle, mistakes, and effort as part of learning (Haimovitz & Dweck, 2017; Sun, 2018).

Teachers' beliefs and reactions may also affect students' attributions when evaluating student performance (Reyna & Weiner, 2001; Weiner, 2000). Many teachers tend to have an entity view of ability, believing it to be fixed and unchangeable (Oakes & Guiton, 1995; Reyna, 2000). Adults with this belief tend to pass judgment more quickly on the basis of initial performance, have low expectations for a student's improvement, express pity for low performance, and resist changing their judgments when students' performance contradicts their initial assumptions (Plaks, Stroessner, Dweck, & Sherman, 2001; Rattan, Good, & Dweck, 2012). If teachers with an entity view of ability hold low expectations for students, their initial perceptions may lead students to attribute failure to low ability or teacher bias (stable and uncontrollable attributions), with serious motivational consequences. Students from lower socioeconomic backgrounds and minority students are especially susceptible to low-ability messages from teacher expectations and behaviors (Banks & Banks, 1995; Graham, 1990; McLoyd, 1998).

Teachers may not be consciously aware of their own beliefs, but they can be mindful of the types of reactions to student performance that can lead to diminished motivation. Students tend to adopt an entity view of ability when teachers praise or reward them for easy tasks, offer unsolicited help, express pity for failures, or fail to blame students for poor performance (Dweck, 2000; Graham & Barker, 1990; Rattan et al., 2012). Also, when teachers tell students to work harder after poor performance, students may adopt entity beliefs about ability if they believe they are already trying as hard as they can (Ames, 1990). In contrast, high school students—but not elementary school students—tend to make high-ability attributions when teachers react to successes with neutral feedback ("Yes, that's correct") or more demanding criteria ("I know you can do better!"; Brophy, 1981; Meyer et al., 1979).

Praising students for being *smart* or telling them they have natural ability also fosters an entity view of ability and can lower students' intrinsic motivation because it implies that learning is about looking smart and not making mistakes (Dweck, 2000; Dweck & Master, 2008). Children who are praised for being smart believe intelligence to be innate and dislike when tasks become more challenging (Mueller & Dweck, 1998). Middle school students of *all* ability levels who believe that intelligence is fixed think that poor performance in school implies low intelligence and that making an effort means they lack intelligence. They also report that they would consider cheating if they did poorly on a test (Blackwell et al., 2007; Henderson & Dweck, 1990). The negative effects of praising for intelligence have been found in children from preschool age through adolescence, in urban and rural settings, and with students from all ethnic backgrounds (Dweck, 2007).

Have you noticed that expectancy-value, goal, and attribution theories overlap? Students develop competency beliefs and expectations for success (expectancy-value theory) based partly on the attributions they make (Wigfield & Cambria, 2010a; Wigfield et al., 2009). They also adopt mastery or performance goals based on their beliefs about ability (Linnenbrink & Fredericks, 2007; Maehr & Zusho, 2009). For example, students with an entity view of ability tend to have a fear of failure that becomes the basis for mastery-avoidance and performance-avoidance goals (Cury et al., 2006). The types of strategies that students

Integrating Cognitive Theories of Motivation

		Students With an Incremental View of Ability	Students With an Entity View of Ability
Attribution theory	*Success*		
	Attributions due to:	Effort (unstable, uncontrollable)	Unstable factors (luck) External factors (help from others)
	Feelings:	Pride and satisfaction	Lack of pride, lack of personal responsibility
	Failure		
	Attributions due to:	Lack of effort (unstable, controllable) or low incremental ability (unstable, uncontrollable)	Stable causes (low entity ability)
	Feelings:	Guilt	Shame
Expectancy-value theory	Competency beliefs:	Perceive ability to be high	Perceive ability to be low
Goal theory	Goal orientation:	Mastery-approach goals (try to improve skills)	• Performance-approach goals (try to look smart); or • Performance-avoidance goals (try to avoid looking inferior)
	Types of strategies:	• Increasing effort • Trying new learning strategies • Seeking help	• Avoiding help seeking • Selecting very easy tasks (to ensure success) or • Selecting very difficult tasks (failure would be due to task difficulty, not low ability) • Using self-handicapping strategies

Sources: Ames, 1992; Covington and Omelich, 1979; Cury et al., 2006; Dweck and Master, 2008; Linnenbrink and Fredericks, 2007; Maatta and Nurmi, 2007; Maehr and Zusho, 2009; Stipek, 2002; Tollefson, 2000; Turner, Meyer, Midgley, and Patrick, 2003; Urdan, 2004; Weiner, 1982.

use—adaptive or nonadaptive—also depend on their goal orientations and beliefs about ability. As Table 15.2 illustrates, these theories are complementary—they work together to give us a more complete understanding of students' motivation.

Developmental and Cultural Differences in Motivation

4 Explain the major developmental changes in motivation.

5 Identify gender and ethnic differences in motivation.

To influence students' motivation, teachers need to understand the developmental changes in motivation and individual differences among students. Let's consider these factors next.

Developmental Changes in Motivation

Most children are intrinsically motivated when they begin school. They tend to value learning, have positive competency beliefs, endorse mastery-approach goals, and attribute

successes to effort and ability but failures to low effort or unstable causes. As students progress from elementary through secondary education, their competency beliefs and their values, goals, and attributions gradually change.

Changes in Expectancies and Values. Children from various Western industrialized countries begin elementary school with positive competency beliefs and high intrinsic value. As early as first grade, children are able to make judgments about their competencies in school subjects, music, and sports, and typically have perceptions of their abilities that are overly optimistic (Muenks, Wigfield, & Eccles, 2018; Wigfield et al., 2015). Of course, there are always exceptions. Some preschoolers show negative attitudes about their ability after failure and may be more at risk for motivational problems as they progress through school (Dweck & Master, 2009). Children in the early elementary grades also value a task primarily according to how much it interests them (Wigfield & Cambria, 2010b). Elementary school boys in the United States, Taiwan, and Japan more highly value sports, while girls in these countries more highly value reading and music (Debacker & Nelson, 2000; Jacobs et al., 2002). As students move from elementary through middle school, they begin to make achievement-related choices not only based on interest (intrinsic value) but also attainment value, utility value, and cost (Wigfield & Cambria, 2010b). For example, a boy might decide to play baseball out of enjoyment, but as he grows older and the game becomes more competitive and requires greater skill (cost), he might choose not to play.

Both competency beliefs and academic values decline from elementary school through high school, with the greatest changes occurring after the transition to middle school (Watt, 2004; Wigfield & Eccles, 1994). Students' beliefs about their abilities in math, language arts, and sports decline from elementary school through high school (Fredericks & Eccles, 2002; Jacobs et al., 2002; Watt, 2004). By adolescence, competency beliefs become stable, which may make it more difficult to improve students' motivation later in development (Muenks, Wigfield, & Eccles, 2018). The decline in beliefs from childhood to adolescence is likely due to several factors, such as children becoming better able to interpret feedback and make social comparisons as well as changes in school climates that emphasize evaluation and competition (Musu-Gillette, Wigfield, Harring, & Eccles, 2015; Wigfield et al., 2015). The values students place on academic and extracurricular activities as well as the value they place on achievement and effort also decline developmentally (Jacobs et al., 2002; Watt, 2004).

Changes in Goal Orientations. Children experience a general shift from a mastery orientation to a performance orientation, and this shift may be due to changes in the learning environment. Many children come to school with mastery goals that reflect what they think their parents' goals are (Friedel, Cortina, Turner, & Midgley 2007; Gonida, Voulala, & Kiosseoglou, 2009). In early childhood, parents and teachers encourage a mastery approach to learning through an emphasis on effort and work habits and through feedback such as praise, happy faces, and stickers (Blumenfeld, Hamilton, Bossert, Wessels, & Meece, 1983; Blumenfeld, Pintrich, Meece, & Wessels, 1982; Turner & Johnson, 2003).

In the middle elementary grades (Grades 3–5), children's abilities are more systematically evaluated through reading groups, standardized test scores, grades, and so on (Wigfield et al.,

Competitive Classroom Practices. Competitive educational practices, such as an emphasis on testing and grades, can lead students to adopt performance goals.
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2009). The other three goal orientations begin to emerge, but performance-approach and performance-avoidant goals are not as distinct as in older students (Bong, 2009). Elementary school students tend to be intrinsically motivated to learn and approach learning tasks to master them (mastery approach) or to show off their abilities (performance approach), rather than approach learning as a way to avoid misunderstanding (mastery-avoidance) or to avoid inferiority (performance-avoidance; Corpus & Wormington, 2014; Dekker et al., 2013; Sungur & Senler, 2010).

From childhood through early adolescence, children's goals become less related to their parents' goals, and their mastery orientations decrease (Dekker et al., 2013; Kim, Schallert, & Kim, 2010; Wigfield & Cambria, 2010b). In middle and high school, they often encounter performance-oriented environments characterized by ability grouping, harsher grading practices, and competitive recognition practices, such as honor rolls and class rankings (Anderman & Maehr, 1994; Midgley, 2002; Wolters & Daugherty, 2007). As a result, students become socialized to adopt performance goals in response to competitive classroom environments that emphasize performance-approach goals (Luo, Hogan, & Paris, 2011; Maehr & Zusho, 2009):

- Students with high perceived competence will tend to adopt performance-approach goals.

- Students with low perceived competence, who begin to doubt their performance, will tend to adopt performance-avoidance goals in addition to performance-approach goals (Barron & Harackiewicz, 2001; Law, Elliot, & Murayama, 2012; Sungar & Senler, 2010). They may be more likely to engage in negative behaviors, such as cheating, avoiding help seeking, and using self-handicapping strategies, especially if they already have lower achievement (Anderman, Cupp, & Lane, 2009; Leondari & Gonida, 2007; Rolland, 2012).

Compared to performance-oriented goal structures, classrooms at all grade levels that emphasize mastery-approach goal structures are more likely to have students who adopt or maintain personal mastery-approach goals and who express interest, enjoyment, and intrinsic motivation (Benita, Roth, & Deci, 2014; Murayama & Elliot, 2009).

Adolescents also begin to endorse multiple goal orientations (Ronćević & Kolić-Vehovec, 2014). For example, high school students consider both grades and interest to be their major motivators (Hynd, Holschuh, & Nist, 2000). We don't yet understand how adoption of both mastery and performance goals may affect motivation. Some research indicates benefits, such as greater interest and intrinsic motivation, higher self-regulation and self-efficacy, and better grades, whereas other research indicates potential psychological distress and emotional exhaustion of balancing extrinsic and intrinsic goals over time (Barron & Harackiewicz, 2000; Corpus & Wormington, 2014; Midgley, Anderman, & Hicks, 1995; Tuominen-Soini, Salmela-Aro, & Niemivirta, 2008).

Many adolescents, especially boys, also may adopt a **work-avoidance goal** orientation—a motivation to avoid academic work (Dekker et al., 2013; Steinmayr, Bipp, & Spinath, 2011). Students motivated by work avoidance often use surface-level learning strategies and engage in behaviors such as (Dowson & McInerney, 2001; Meece & Miller, 2001)

- pretending they don't understand something,

- complaining about assignments,

- engaging in off-task behavior,

Self-regulation:
See Module 9

Self-efficacy:
See Modules 9 and 16

- taking the easiest path when given choices, and

- not contributing their fair share in group activities.

Students may engage in work-avoidant behaviors due to boredom or lack of interest in the subject (Duda & Nicholls, 1992). However, another reason for work-avoidant behaviors may be that students believe putting forth effort indicates low ability, a trait they consider to be stable and unchanging (King & McInerney, 2014). When these students struggle on tasks, they experience a decline in their perceived ability. Therefore, they try to exert minimal effort on academic tasks or find ways to avoid the tasks altogether (Kumar & Jagacinski, 2011). Adolescents are more likely to adopt a work-avoidance orientation if they perceive their parents as having performance-approach goals for them or if their teachers use a performance-approach orientation (Peixoto, 2011; Rončević & Kolić-Vehovec, 2014).

Changes in Attributions. Many children show a developmental progression from an optimistic, incremental view of ability to a more pessimistic entity belief. Children in preschool and early elementary school (Muenks & Miele, 2017; Stipek & Daniels, 1990; Stipek & Tannatt, 1984) tend to

- think of *ability* broadly, as comprising social behavior, conduct, work habits, and effort;

- believe that individuals who try hard are smart;

- have a limited ability to reflect on and compare their performance to that of their peers; and

- don't understand the compensatory relationship between effort and ability—that those with lower ability need greater effort to succeed compared to those with higher ability.

Based on these characteristics, children have high expectations for success and are resilient after failure (Stipek, 1984). Around age 7 or 8, children begin to understand normative comparisons and to compare themselves to others more (Dweck, 2002). In middle school, students are able to use normative criteria to judge their ability and begin to understand the compensatory relationship between effort and ability (Dweck, 2002). They now believe that exerting greater effort on a task compared to others implies lower ability (Muenks & Miele, 2017). As a result, adolescents' self-assessments become more realistic, leading them to have more negative beliefs than before (Wigfield et al., 2015).

> Think about how your own competency beliefs, values, goals, and attributions have changed throughout your schooling.

Gender Differences in Motivation. Boys and girls in both Eastern and Western cultures generally have similar beliefs about their overall academic competence (Stetsenko, Little, Gordeeva, Granshof, & Oettingen, 2000). However, students' attributions, beliefs about ability, expectancies, and values differ by gender.

Elementary school boys and girls differ in their competency beliefs and values for different domains. Boys have more positive competency beliefs about math, science, and sports, while girls have more positive beliefs about music, reading, and language arts (Wigfield et al., 2015). As students transition to middle school and high school, girls more highly value

English, and boys more highly value math and sports (Jacobs et al., 2002; Nagy, Trautwein, Baumert, Köller, & Garrett, 2006; Stephanou, 2008). Middle school and high school boys in several countries, including the United States, report a higher intrinsic value for math compared to girls of the same age (Gaspard et al., 2015; Watt, 2004; Watt et al., 2012). Even though there generally are no gender differences for the utility value of math across various countries and grade levels, girls in the United States typically perceive math as less useful for future goals (Frenzel, Pekrun, & Goetz, 2007; Gaspard et al., 2015; Steinmayr & Spinath, 2010). Despite their lower utility value for math, adolescent girls seem to have higher attainment value in the subject compared to boys (Gaspard et al., 2015). Girls consider it important to perform well in math classes even if they don't consider math to be important for their future. However, girls' value for math appears to be a double-edged sword because they also perceive math to have a higher cost compared to boys. They report more anxiety and hopelessness in math and feel that math requires more effort compared to that made by boys (Frenzel et al., 2007; Gaspard et al., 2015).

In elementary school, girls also begin to develop an entity belief about their ability in general (Dweck, 2000, 2002). Compared to boys,

- girls are less likely to attribute success to ability and tend to rate their ability lower, even when they outperform boys (Freedman-Doan et al., 2000; Stetsenko et al., 2000); and

- girls are more likely to attribute failures to lack of ability and show decreased persistence and motivation after failure (Mok, Kennedy, & Moore, 2011).

Giftedness: See Module 20

Even girls who are gifted and high achieving hold an entity view of ability more often than do boys (Eccles et al., 2000; Freedman-Doan et al., 2000). While results are not consistent across studies, this effect tends to be true for gender-stereotyped subjects, such as math and science (Gunderson et al., 2013; Meece & Painter, 2008).

Cultural norms, such as the expectation that math and science are male achievement domains, may lead to sex-role stereotypes—the idea that boys are better at math and girls are better at language arts. These societal values may in turn contribute to gender differences in competency beliefs and values. Boys may value math and sports because they have been socialized to believe these are male-achievement domains (Eccles, 2005; Wigfield & Cambria, 2010a):

- Some parents may unknowingly convey their belief that boys are more competent than girls in math and science (Meece et al., 2009). They may offer different types of encouragement to boys and girls in math, and they may subtly influence children's choices of activities, such as being more likely to buy math and science items for boys than girls (Bleeker & Jacobs, 2004; Wigfield et al., 2015).

- Teacher–student interactions also may convey different expectations for boys and girls (Brophy & Good, 1974). Teachers tend to praise boys only for successful performance while praising girls for success as well as easy or unimportant achievements, such as neatness or following instructions, leading to a perception of low ability among girls (Dweck, Davidson, Nelson, & Enna, 1978).

Gender differences in math: See Module 20

Nevertheless, we should interpret these gender differences in motivation with caution. No clear gender differences in students' achievement goal orientations have been found, and gender differences in causal attributions are small (Meece, Glienke, & Burg, 2006). Gender differences in *actual* achievement domains such as math also are very small (Lindberg, Hyde, Peterson, & Linn, 2010; Reilly, 2012).

Ethnic Differences in Motivation. Ethnic differences in motivation have been found across cultures as well as within our own culture. Let's explore some findings.

Students from Asian cultures tend to have a motivational outlook different from that of most students in Western cultures. Students in Western cultures, such as the United States, Canada, and England, typically have higher competence beliefs in various subjects than do students in East Asian cultures (Wigfield & Cambria, 2010a; Zusho & Pintrich, 2003). This is possibly due to the emphasis that East Asian cultures place on self-criticism versus the emphasis Western cultures place on self-enhancement (Heine & Hamamura, 2007). For example, Chinese parents tend to de-emphasize their children's successes and provide more negative emotional responses to their failures (Ng, Pomerantz, & Lam, 2007). Japanese and Chinese students attribute outcomes more to effort and less to ability than do American students (Heine et al., 2001). Asian parents' negative reactions to failures may lead their children to focus on self-improvement (Ng et al., 2007). This attitude is consistent with the Asian philosophy emphasizing the importance of striving for improvement and the belief that ability is malleable (Stipek, 2002).

Within American culture, African American and Hispanic adolescent boys may be most at risk motivationally. African American elementary school students believe in personal responsibility for their achievements and failures and have high expectations for success (Graham, 1984). During adolescence, however, African American and Hispanic boys are more likely than other groups to reject achievement-related values and become disengaged in education (Mau & Bikos, 2000; Taylor & Graham, 2007). The tendency of minority students to devalue academic achievement may result from several factors:

- An increasing tendency to make external attributions for academic success—believing that school success is determined by external forces beyond their control (van Laar, 2000)

- Their belief that education has limited usefulness for long-term social and economic success because discrimination will narrow their opportunities (Mickelson, 1990; Ogbu, 1994, 2003)

- Low teacher expectations and negative classroom climates (Meece, Glienke, & Askew, 2009; Wood, Kaplan, & McLoyd, 2007)

- A disconnect between the values and norms promoted by schools—that performance in school will lead to future success—and the cultural values, beliefs, and norms regarding schooling that are endorsed in their homes or communities (Brown-Wright & Tyler, 2010; Tyler et al., 2010)

A discrepancy between home and school values and a general devaluing of achievement may lead minority students in middle school and high school to adopt performance-avoidance goals or work-avoidance goals, engage in academic self-handicapping such as cheating, display lower academic self-efficacy, and consequently achieve lower grades (Arunkumar, Midgley, & Urdan, 1999; Brown-Wright & Tyler, 2010; Tyler et al., 2010).

Researchers are unsure why this shift in motivational orientation by minority students occurs at adolescence. The changes students experience in their transition from elementary school to more advanced grades may affect students' values about education, regardless of their ethnicity. Some White adolescents from middle and upper socioeconomic backgrounds also have expressed doubt in the utility of school, despite their average school performance. These anti-academic values appear to be rooted in a sense that teachers were not supportive, curricula were not meaningful, and the school environment was competitive and stifled autonomy (Roeser, Eccles, & Sameroff, 2000; Wigfield et al., 2015).

As with gender differences, we should interpret ethnic differences in motivation with caution. Even though research cites *average* differences in motivational orientations among ethnic groups, we should be careful not to make stereotypical assumptions about a student's motivation based on ethnicity. Students' motivation is more likely due to their achievement experiences, the beliefs and values of their families, and the classroom climate than to their ethnic or racial identification. Much more research needs to be conducted for us to understand ethnic differences in motivation.

Serious Motivational Problems

6   Explain how learned helplessness and anxiety affect students' motivation to learn.

Learned Helplessness

Learned helplessness occurs when students who have experienced repeated failures attribute their failures to causes beyond their control (Seligman & Maier, 1967). They might attribute failure to *external*, stable, and uncontrollable causes such as teacher bias ("The teacher doesn't like me") or task difficulty ("Math is too hard for me"). Or they might attribute failure to *internal*, stable, and uncontrollable causes such as lack of ability (entity; Dweck, 2000; Dweck & Goetz, 1978). Teachers can use the following characteristics to identify learned helplessness in students (Stipek, 2002):

- Says "I can't"

- Doesn't pay attention to the teacher's instructions

- Doesn't ask for help, even when it is needed

- Does nothing (e.g., stares out the window)

- Guesses or answers randomly without trying

- Doesn't show pride in successes

- Appears bored or uninterested

- Is unresponsive to the teacher's encouragement to try

- Is easily discouraged

- Doesn't volunteer in class

- Gets out of or avoids work (e.g., has to go to the nurse's office)

Learned helplessness can be domain-specific, occurring in one subject but not another (Sedek & McIntosh, 1998). Even high-achieving students can experience learned helplessness (Dweck, 2000). Because learned helplessness results from experiences of failure, it is less common in preschool children, who typically receive reinforcement and encouragement of their efforts and products (Rholes, Blackwell, Jordan, & Walters, 1980).

Teachers should be aware that simply providing opportunities for success will not alleviate learned helplessness. For several reasons, it is difficult to convince students with learned helplessness that they can succeed in the future, because they (Ames, 1990; Diener & Dweck, 1978)

- believe others performed better than they did,

- do not take responsibility for their successes (i.e., believe successes are uncontrollable),

- underestimate their performance when they do succeed, and
- interpret a new failure as further evidence of their lack of ability.

To reduce learned helplessness, teachers can use a combination of the motivational techniques that are discussed in the last section. In general, learned helplessness is less common in classrooms where teachers emphasize understanding (rather than memorizing), stimulate creative thinking, and value students' opinions (Sedek & McIntosh, 1998).

Anxiety

All students occasionally experience anxiety in achievement situations in which their abilities are being evaluated. For most students, a small amount of **anxiety** does not impair performance and may even facilitate it, especially if the task is not too difficult (Ball, 1995; Sieber, O'Neil, & Tobias, 2008). However, for other students, anxiety can significantly impair motivation and academic performance. Students with anxiety experience mental worry, which most directly interferes with learning and task performance (Tobias, 1992; Zeidner & Nevo, 1992). They also experience negative emotions, such as nervousness or tension, which are indicated physically by increased heart rate, sweaty palms, and so on.

Anxiety is more common in school-age children and adolescents than in preschool children because parents and early childhood educators frequently reinforce young children's efforts and rarely criticize failures (Stipek, 1984). In school-age children, anxiety can interfere with performance at three points during the instructional process, shown in Table 15.3.

Girls typically show higher anxiety levels than boys (Carey, Devine, Hill, & Szűcs, 2017; Ohannessian, Milan, & Vannucci, 2017). Also, girls and boys may become anxious

▼ TABLE 15.3

Understanding and Reducing Anxiety in Students

Stage of Learning	Anxiety Impairs Ability to . . .	Example of Outcomes	Reduce Anxiety by . . .
Preprocessing	Learn new material	Impaired ability to • pay attention • take notes • listen carefully to teacher's explanation	• Providing clear, unambiguous instructions • Presenting organized lessons • Allowing students to reinspect material, such as a video that was shown in class
Processing	Retain information after material is presented	• Less effective study skills • Poor performance even when studying more	• Teaching effective study skills
Output	Retrieve information in evaluative situations (i.e., *test anxiety*)	• Divided attention between the task and thoughts about one's performance • Lack of attention to important information during testing • More off-task behavior • Poor test-taking strategies	• Using relaxation techniques prior to testing situations • Teaching test-taking strategies • Relaxing time limits • Describing tests in a way that de-emphasizes ability • Providing instructions that reduce students' worries about being evaluated

Sources: Bruch, Juster, and Kaflowitz, 1983; Linn and Gronlund, 2000; Naveh-Benjamin, 1991; Naveh-Benjamin, McKeachie, and Lin, 1987; Nottlemann and Hill, 1977; Plass and Hill, 1986; Roskes et al., 2014; Sapp, 1999; Stipek, 2002; Tobias, 1992; Topman, Kleijn, van der Ploeg, and Masset, 1992; Vagg and Spielberger, 1995; Wigfield and Eccles, 1989.

for different reasons. Girls may be more sensitive to social approval from adults (worrying about making parents or teachers proud of them), while boys may be more concerned with peer evaluation (Dweck & Bush, 1976; Maehr & Nicholls, 1980). As they progress through the grades, girls may become more anxious about certain school subjects, such as math and English, because of the stereotypes these subjects elicit (Beilock, Gunderson, Ramirez, & Levine, 2010; Meece, 1981).

Teachers' own anxieties or their own personal entity views of ability in certain subjects may send subtle but powerful messages to students, especially girls (Reyna, 2000). For example, a study by Beilock et al. (2010) showed that in Grades 1 and 2 classrooms with female teachers who had math anxiety, girls but not boys were more likely to endorse the stereotype that "boys are good at math" at the end of the school year. They also generally performed more poorly in math on end-of-year assessments compared to boys. Because there was no link between a teacher's math anxiety and her students' math achievement at the beginning of the school year, one might conclude that the teachers' math anxiety subtly influenced the beliefs of their female students.

Teachers can use varied approaches for reducing students' anxiety, depending on when students experience anxiety during the instructional process, as Table 15.3 outlines. Techniques such as relaxing time pressures, allowing students breaks from focused cognitive activity, and providing clear guidelines for how to complete tasks can also prevent students from developing performance-avoidance or work-avoidance orientations (Roskes et al., 2014). Developmental level is also an important consideration in choosing methods to reduce anxiety in students. Because younger children are more responsive to praise and feedback from adults than are older children, teachers can alleviate anxiety by providing additional support and encouragement and by ensuring that academic tasks are at an appropriate level of difficulty so students do not experience multiple failures (Wigfield & Eccles, 1989). Older students may benefit more from techniques that focus on changing their negative views of ability and attributions for failure and worries, in addition to study skills training (Wigfield & Eccles, 1989). Relaxation techniques involving writing about one's emotions prior to the stressful activity, such as taking an exam, have been shown to reduce negative thoughts that might overburden working memory and increase performance in high school and college learners (Frattaroli, Thomas, & Lyubomirsky, 2011; Park, Ramirez, & Beilock, 2014; Ramirez & Beilock, 2011).

> Can you remember a time when you felt anxiety or helplessness? Think about what may have caused these feelings and what you did to overcome them.

APPLICATIONS

ENHANCING STUDENTS' MOTIVATION

7 Identify student-level and classroom-level strategies for enhancing motivation.

The cognitive theories we've examined provide many useful strategies for improving students' motivation. Teachers can use certain techniques to stimulate the motivation of individual students and structure their classrooms and tasks to encourage motivation in all students.

Student-Level Techniques

Change students' attributions for success and failure. We should not assume that individuals with an entity view are doomed to have low overall motivation and performance. Entity and incremental views of ability are domain specific (Dweck, Chiu, & Hong, 1995), meaning students may believe that they have fixed ability in math but malleable ability in other subjects or in sports.

The first step is to determine what attributions students currently make for their successes and failures. To do this, teachers can ask students about their expectancies and their views about skill improvement and difficulty level of tasks, as shown in Guidelines 15.1. The next step is to encourage students to shift from making an entity attribution for failures to making more positive attributions that will encourage them to continue trying and be intrinsically motivated. Teachers can encourage students to view ability as incremental by providing feedback to students that attributes future success to effort, offers concrete strategies for improving, and avoids pity for poor performance (Rattan et al., 2012). Also, training students to attribute failure to controllable factors, such as lack of effort or poor learning strategies, rather than to low ability can be accomplished by having them read persuasive articles or participate in discussions that focus on adaptive strategies for dealing with challenges and that emphasize ability as improvable (Blackwell et al., 2007; Paunesku et al., 2015; Perry, Stupnisky, Hall, Chipperfield, & Weiner, 2010). Interventions such as these have led to improvement in grades, decreases in attributions to uncontrollable factors, and increased motivation (Blackwell et al., 2007; Paunesku et al., 2015; Perry et al., 2010). Recent research indicates that it may not practical to implement these types of interventions with all students. The strongest effects have been found for students who are at-risk academically or from lower socioeconomic backgrounds (Binning, Wang, & Amemiya, 2019; Sisk, Burgoyne, Sun, Butler, & Macnamara, 2018).

Teach students to value challenge, improvement, and effort. Encourage students to view challenge as necessary for learning instead of something low-achieving students experience (Dweck & Master, 2008). Also, help students realize that success should be defined as improvement in knowledge or skills rather than looking smart or outperforming others. This conveys the message that effort is important for everyone, not just for students with low ability (Dweck & Master, 2008; Snyder, Malin, Dent, & Linnenbrink-Garcia, 2014). Some students are not aware that effort can affect task success (Urdan, Midgley, & Anderman, 1998). Other students, especially high-achieving and gifted students, view academic success as the result of high-entity ability rather than effort (Snyder et al., 2014). Teaching all students that increased effort leads to greater achievement increases their actual achievement (Craske, 1985; Van Overwalle & De Metsenaere, 1990).

Provide short-term goals and strategies for making progress toward goals (Ames, 1990). When teachers help students set short-term mastery goals, students are more willing to put forth effort because they learn that both effort and ability contribute to success (Schunk, 1989; Tollefson, 2000). This technique will prepare elementary school students to accept that students with different levels of ability need different amounts of effort to obtain the same level of achievement. In middle school and high school, encouraging mastery and providing students with opportunities to experience success at achieving academic goals may prevent adolescents from viewing academic tasks as a measure of their ability and discourage the adoption of work-avoidance goals (Kumar & Jagacinski, 2011; Tollefson, 2000).

Classroom-Level Techniques

Reduce the competitive atmosphere of the classroom. Students at all levels of K–12 education— regardless of their motivational orientation—consider school to be competitive (Maehr & Midgley, 1991; Thorkildsen & Nicholls, 1998). When the classroom atmosphere is competitive, students are likely to adopt performance-approach goals and may endorse performance-avoidance goals if they experience failure and perceive themselves to lack competence (Law et al., 2012; Luo et al., 2011). An emphasis on performance-approach goals in the classroom can lead students to adopt an entity view of ability (Lin-Siegler, Dweck, & Cohen, 2016; Park et al., 2016). Competitive classroom contexts are likely to draw students' attention away from the learning activity toward more extrinsic goals and reduce their intrinsic motivation (Vansteenkiste, Matos, Lens, & Soenens, 2007). Therefore, experts advise teachers to advocate a mastery-approach structure and to avoid the use of a performance-approach orientation because teachers cannot guarantee that all students will feel competent all of the time (Law et al., 2012). Teachers can reduce competition and enhance students' motivation by using any academic tasks that foster a mastery orientation because students will have less opportunity or need to engage in social comparisons of performance (Marshall & Weinstein, 1984; Rosenholtz

& Simpson, 1984). For example, teachers may consider using mastery learning, a method in which students work at their own pace on curricular units once teachers present material and repeat the units until they have achieved a certain level of mastery. Also, teachers can use cooperative learning, an approach in which students of varying ability levels work together to achieve a single goal on a task or project. Because cooperative learning helps students achieve social goals and relies on peer support, this approach may reduce the tendency for students to adopt work-avoidance goals and may help sustain intrinsic motivation (King & McInerney, 2014; Kumar & Jagacinski, 2011).

Use appropriate methods of evaluation and recognition. Consider these methods when evaluating students' learning:

- Praise students only when they learn or do something well, not for being smart, perfect at a task, or completing a task quickly or easily (Dweck, 2000; Dweck & Master, 2008). Saying something positive just to praise a student backfires because usually it is about something that is unimportant or irrelevant to the task requirements, implying that the student has low ability (Ames, 1990). Such praise will undermine intrinsic motivation.

- Take developmental level into account when using praise. In young children, praise for effort enhances self-confidence and is considered an indicator of high ability because young children do not differentiate between ability and effort (Schunk, 2008). However, in middle and high school students, who have differentiated concepts of ability and effort, praising effort and praising for success on easy tasks can be interpreted as signs of low ability (Barker & Graham, 1987; Henderlong & Lepper, 2002).

- Offer opportunities for improvement so students know that effort is important and that performance is not due solely to fixed ability (Covington & Omelich, 1984b).

- Be aware that motivational strategies such as announcing highest and lowest scores, posting grades, displaying students' work, and charting progress emphasize social comparisons. When ability comparisons are heightened, this can decrease intrinsic motivation and lead high achievers to experience anxiety about keeping up their success and low achievers to give up when they fail (Rose, 1989; Weinstein, 1993). Such practices need not undermine intrinsic motivation, though. For example, if the reason for displaying student work is to show improvement over past performance or reaching a standard of performance, the display would promote feelings of mastery (Fryer & Elliot, 2008).

Emphasize the value of learning. When teachers emphasize the relevance of to-be-learned knowledge, students will appreciate its utility value—its usefulness to students' goals in or out of school (Brophy, 2008). Students who see utility value in what they are learning are more likely to engage in meaningful learning—learning that results in rich, interconnected knowledge structures rather than discrete facts—which can lead to increased effort, interest, and achievement (Brophy, 1999; Wagner et al., 2006). Teachers can foster an appreciation for learning by modeling interest and enthusiasm, making abstract content more concrete and personally relevant to students, connecting content to students' interests and backgrounds, and emphasizing the utility value of content for tasks outside of school (Brophy, 2008).

However, simply informing students about the usefulness of content to their future goals may not be effective, especially for students who believe they have low ability (Canning & Harackiewicz, 2015; Durik, Shechter, Noh, Rozek, & Harakiewicz, 2015). For example, if students struggle with math, why would they view it as helpful to their future? Instead, having students generate ways the content is relevant to them may be more effective (Canning & Harackiewicz, 2015; Hulleman & Harackiewicz, 2009). Students may find calculating percentages important for understanding batting averages or for figuring out sale prices at the mall. Teachers also can have students write about the personal relevance of a topic or school subject, which can improve interest, persistence, and grades even in students with low achievement or students with lower socioeconomic backgrounds (Canning et al., 2017; Harackiewicz, Canning, Tibbetts, Priniski, & Hyde, 2016; Hulleman & Harackiewicz, 2009; Hulleman, Kosovich, Barron, & Daniel, 2017). Providing students with a choice in how they express the relevance of a topic, such as writing an essay or a letter to a friend, can enhance students' interest and utility value of the subject (Rosenzweig et al., 2018). Because much of the research on utility value has been conducted with adolescents in high school and college, we do not know about the efficacy of this approach with students in lower grades.

> Think of some specific ways you can implement these guidelines in the grade you intend to teach.

SUMMARY

1. **Define expectancies and values and explain how they influence students' motivation.** Expectancies are an individual's expectations for success on a task, which are based partly on one's competency beliefs. Values are the reasons for choosing to do a task (attainment value, intrinsic value, utility value, and cost). Expectancies and values, in combination, determine an individual's motivation to engage in a particular task.

2. **Compare and contrast the two types of mastery and performance goals.** Mastery-approach goals (improving knowledge) and performance-approach goals (besting others) both lead students to be intrinsically motivated and are associated with many beneficial outcomes. Mastery-avoidance and performance-avoidance goals both involve avoiding situations that show one's incompetence, but the standard for incompetence is absolute (e.g., best/worst) for mastery avoidance and normative (compared to others) for performance avoidance. Performance-avoidance goals are related to poor intrinsic motivation.

3. **Identify attributions that enhance motivation and those that lower motivation.** Attributing success and failure to amount of effort increases motivation to learn. Attributing success to controllable causes leads to further motivation, while attributing failure to stable and uncontrollable causes, as with an entity view of ability, hinders motivation. Teachers who give praise for easy tasks, express sympathy or pity for failures, or offer unsolicited help may inadvertently convey a sense of low ability in students. Praising intelligence also leads to an entity view of ability, which could lower motivation when students encounter failure or difficult tasks.

4. **Explain the major developmental changes in motivation.** Young children begin school with a mastery orientation. They have an incremental belief about ability, have high expectancies, and choose tasks based primarily on intrinsic value. As children progress from elementary through high school, they shift toward a performance orientation. Adolescents place less emphasis on mastery and effort and believe that ability is fixed. As a result, they have lower competency beliefs, expectancies, and intrinsic values for academic tasks.

5. **Identify gender and ethnic differences in motivation.** Girls tend to hold an entity view of ability and to rate their ability lower than that of boys, especially in math and science. While research suggests that African American and Hispanic adolescents may be most at risk motivationally compared to other ethnic groups, motivation is the result of many cultural and environmental factors rather than simply the product of a person's ethnicity.

6. **Explain how learned helplessness and anxiety affect students' motivation to learn.** Students with learned helplessness believe that they have no control over learning outcomes and therefore expect to do poorly, lowering motivation. Anxiety may affect an individual's performance while learning, studying, or retrieving material. The expectation of performing poorly as a result of anxiety lowers motivation to learn.

7. **Identify student-level and classroom-level strategies for enhancing motivation.** Teachers can improve the motivation of individual students by changing their attributions for success and failure and by providing short-term goals and strategies for progressing toward goals. They can use classroom-level techniques, such as emphasizing values that promote intrinsic motivation, reducing the competitive atmosphere of the classroom, and using appropriate methods of evaluation and recognition.

KEY CONCEPTS

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CASE STUDIES: REFLECT AND EVALUATE

Early Childhood: The Worksheets

These questions refer to the case study on page 270.

1. According to expectancy-value theory, what is Melissa's expectancy for completing her schoolwork? Based on evidence from the case study and the module, what attribution do you think Melissa might make for her math ability?

2. Kristina, like Emanuel and Martin, appears to like math and to be good at math. Based on the research evidence in the module, predict how her competency beliefs in math and the value she places on math might change as she progresses through the upper elementary grades and middle school. How might her attributions change?

3. Imagine that you are having a parent–teacher conference with Martin's mother. Explain to her why she should not praise him for being smart. What effect might this have on Martin's subsequent motivation?

4. Which student(s) might be the most difficult to motivate based on goal theory? Which student(s) might be the most difficult to motivate based on attribution theory? Cite evidence from the case study to support your position.

5. Based on research evidence regarding the effects of praise, explain why Mrs. Garvey encouraging Melissa to try harder would be appropriate for a kindergartner but not for a student in middle school or high school.

Elementary School: Writer's Block

These questions refer to the case study on page 272.

1. According to expectancy-value theory, what is Carter's expectancy for completing his writing assignment? Which type of value—intrinsic value, attainment value, or utility value—does Carter have for writing?

2. Based on the information in the case study regarding goal orientations, which student—Shanti, Zara, or Carter—would be most difficult to motivate? Why? Which student would be easiest to motivate? Why?

3. Reread Mrs. Okuda's interactions with James and Mason. Based on these interactions, what attribution might James and Mason make for their writing performance? Are they likely to have motivation for freewriting in the future?

4. What information do students at this developmental level use in making attributions for their performance?

5. Carter appears to have anxiety about writing when he starts his assignments. What can Mrs. Okuda do to help reduce his anxiety about writing?

Middle School: The Math Review

These questions refer to the case study on page 274.

1. In your own words, define expectancy and value. What is Aaron's expectancy for and value of the math game activity? Which type of value—intrinsic value, attainment value, or utility value—do Jeremy and Rachel have for the math activity?

2. According to goal theory, which student—Jesse, Jeremy, or Rachel—would be most difficult to motivate? Why? Which student would be easiest to motivate? Why?

3. What attribution does Mr. Pantera likely make for Aaron's performance in his class? Does Mr. Pantera view math performance to be the result of an entity view of ability or an incremental view of ability?

4. What attribution does Jesse make for her math performance? Cite research evidence related to gender differences in attributions that might help explain Jesse's attributional pattern.

5. What error did Mr. Pantera make in his feedback to Jesse?

6. At what point in the instructional process does Jesse's anxiety affect her performance? What specific strategies can Mr. Pantera use to help reduce Jesse's anxiety?

High School: Exam Grades

These questions refer to the case study on page 276.

1. What is Chelsea's expectancy for success in physics? Speculate on the social, cultural, and individual factors that might contribute to this expectancy.

2. Explain how physics holds *intrinsic value*, *attainment value*, and *utility value* for Chelsea. If Chelsea decides not to drop AP Physics, what are the *costs* resulting from this decision?

3. Explain why students in AP Physics are likely to adopt performance goals. What factors in their environment might contribute to this orientation?

4. What type of goal orientation do students in general science have? Support your answer with details from the case. Explain how this goal orientation is typical of adolescents.

5. What attribution do Nicholas and Chelsea make for their C+ grades in AP Physics? Based on the research on gender differences in attributions, why is Chelsea's attribution not surprising?

6. What specific suggestions would you give Mr. Womack for intrinsically motivating students in general science? Would your suggestions differ for students in AP Physics? If so, why and how? If not, why not?

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