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REWARDS[1]

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A reward is any environmental offering one person gives to another in exchange for some service or achievement. A service is typically a requested action (e.g., read the chapter), whereas an achievement is typically performing to a standard (e.g., make the highest score). In the classroom, such teacher offerings set in motion several important downstream effects, including subsequent changes in students' motivation, behavior, and development.

Teachers offer rewards because they believe that these environmental offerings can do for students what very few other classroom events can—namely, rather suddenly transform a classroom event from "something not worth doing" into "something worth doing." For instance, a student may view "sitting still" as something not worth doing until the teacher offers "extra recess time" for doing so. Such an attractive offer can almost magically transform the requested behavior into something worth doing.

REWARDS, MOTIVATION, AND BEHAVIOR

Rewards work—they change motivation and they change behavior (Cangelosi, 2008; Emmer & Evertson, 2012; Evertson & Emmer, 2012). But just as readers do not need an ornithologist to tell them that birds fly, readers similarly do not need an educational psychologist to tell them that rewards work. It is obvious. A student offered an attractive enough reward will willingly engage in almost any teacher-requested behavior. There is, however, a great deal to be learned in asking questions such as the following:

- Why do rewards work?
- When (i.e., under what conditions) do rewards work?
- Do rewards produce any troubling side effects?
- Is offering rewards the best way for teachers to motivate students?

The Brain's Reward Center

To understand why rewards work, it is helpful—even necessary—to look to neuroscience. This is so because the energetic, enthusiastic reaction that educators see from students who have just been promised an attractive reward arises from subcortical brain events. The experience of reward begins as the student perceives that the environmental offering has rewarding and beneficial properties (e.g., it tastes sweet, it brings social acceptance). This stimulus evaluation occurs largely in the amygdala (Baxter & Murray, 2002). What the amygdala detects, responds to, and learns about is the presence vs. absence of reward, the value or quality of the available reward, the predictability of the reward, and the costs associated with trying to obtain the potential reward (Berridge & Kringelbach, 2008; Whalen, 2007). If there is an attractive, rewarding, and personally beneficial stimulus in the environment, the amygdala will detect it, evaluate it, and respond to it.

Once the person encounters an environmental object that has rewarding properties (e.g., it is attractive, it is personally beneficial), the amygdala cues the ventral tegmental area to release dopamine, and that dopamine release activates the ventral striatum in general and the nucleus accumbens in particular (Berridge & Kringelbach, 2008; Jennings et al., 2013). As illustrated in Figure 26.1, the amygdala, nucleus

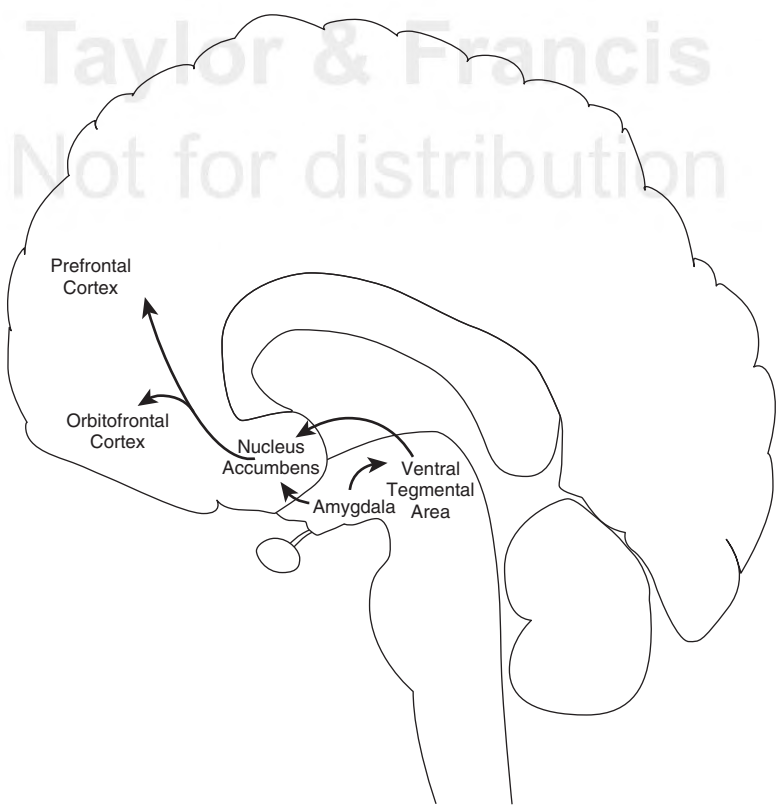

Figure 26.1 The dopamine-based reward center.

accumbens, and the ventral tegmental area are closely interconnected, and they collectively serve as the neural basis of the dopamine-based reward center. As shown in Figure 26.1, the amygdala–to–ventral tegmental area–to–nucleus accumbens reward circuit also projects fibers upstream into the cortical brain. In the prefrontal cortex, the person has a conscious experience of pleasure (e.g., "I like it."), and the orbitofrontal cortex stores the learned reward value of environmental objects so that the person will know (will remember) that a particular object has produced rewarding consequences in the past.

Students learn the reward value of environmental objects and events mostly through the extent of dopamine release those objects and events are able to produce (Hampton & O'Doherty, 2007; McClure, Laibson, Loewenstein, & Cohen, 2004; O'Doherty, 2004). Through the reward-related information that is dopamine release, students learn what to like, what to prefer, and what to value (Smith, Tindell, Aldridge, & Berridge, 2009).

The brain's reward center has an interesting anatomical relationship with other brain areas. These subcortical structures send projections to almost every part of the brain, whereas a smaller number of projections return information back to the ventral striatum (Cardinal, Parkinson, Hall, & Everitt, 2002). This anatomical and communication-pathway imbalance helps explain why emotion and reward tend to overpower cognition and self-control more than cognition self-regulates emotion and reward. In addition, the prefrontal cortex (cortical brain) of children and adolescents matures more slowly than does the early maturing subcortical brain (Gladwin, Figner, Crone, & Wiers, 2011). This lesser capacity for executive self-control may explain some of the reason why reward-based motivational and behavioral programs are often found in classrooms of children and students with special needs.

Why Rewards Work

Why do students get so excited about the prospect of receiving an attractive extrinsic reward? Why do these rewards enliven positive emotion and approach behavior? What all behavior-energizing rewards do is signal the opportunity for personal gain, and this environmental signal that personal gain is imminent is what triggers dopamine release[2] (D'Ardenne, McClure, Nystrom, & Cohen, 2008). Routine and expected classroom events leave the subcortical brain unexcited, and dopamine release does not occur. However, dopamine release and behavioral approach occur when events take an unexpected turn for the better, as one encounters a pleasant image (looking at a beautiful face), a pleasant taste (sipping sweet juice), or a learned cue (teacher dims the lights before showing an interesting video)—trigger dopamine release (Sabatinelli, Bradley, Lang, Costa, & Versace, 2007; Wise, 2002). As rewards become predictable (the teacher gives the same praise or bonus points day after day), they lose their capacity to trigger dopamine release and hence their capacity to energize reward-directed behavior (D'Ardenne, McClure, Nystrom, & Cohen, 2008).

Some level of dopamine is always present in the brain. When classroom events offer rewards in ways that are better than expected (more frequent, higher quality),

the ventral tegmental area releases greater dopamine, and the increased dopamine serves as information that the event is producing more reward than it was anticipated to deliver. Dopamine release is therefore greatest when rewarding events occur in ways that are unpredicted ("Wow, I didn't know that would be so good!") or underpredicted ("Wow, that was better than I thought it would be!") (Mirenowicz & Schultz, 1994). In contrast, when classroom events offer rewards in ways that are worse than expected (less frequent, lower quality), a lesser dopamine release serves as information that a particular course of action is producing less reward than it was anticipated to deliver (Montague, Dayan, & Sejnowski, 1996). In addition, it is not the receipt of reward that triggers dopamine release but rather the *anticipation* of reward. That is, dopamine release occurs when the student first learns that he or she is about to receive praise, a special privilege, or a good grade (reward anticipation), not when the student actually receives the praise, privilege, or good grade (reward receipt). Thus, ~~the~~ extent of dopamine release is the essence of reward-related information, and it occurs (1) ~~with~~ the environment signals that personal gain is imminent, (2) when the reward is better than expected, and (3) during reward anticipation rather than during reward receipt.

Rewards Work—But Only in a Qualified Way

Rewards work: They increase motivation, and they increase behavior. But rewards increase a particular kind of motivation and a particular kind of behavior. Rewards increase extrinsic motivation, and rewards increase extrinsically motivated behavior. Extrinsic motivation is an environmentally created (i.e., reward-created) reason to initiate a specific behavior. It arises from a do-this-in-order-to-get-that behavioral contract between teacher and student, where "this" is the teacher-requested behavior, and "that" is the teacher-offered reward. From the student's point of view, extrinsic motivation exists as a what's-in-it-for-me? type of motivation.

For the person who is externally regulated (i.e., reward regulated), the presence vs. absence of a reward and the high versus low quality of the reward regulate the rise and fall of (extrinsic) motivation. A student who is externally regulated does not have a difficult time beginning a task if there is an attractive high-quality reward at stake, but that same student will have a difficult time beginning the task if there is no attractive reward or only a low-quality reward at stake. The problem with externally regulated behavior is that, compared to other types of motivation and other ways of regulating behavior, it produces relatively poor classroom functioning and outcomes (Kohn, 1993; Ryan & Connell, 1989; Ryan & Deci, 2000).

Relying on a classroom management strategy that yields a relatively poor-quality motivation and classroom functioning seems like a low-grade compromise for teachers to make. Rewards do gain teachers classroom compliance from students, but there are better and more effective classroom management strategies to employ. These alternatives will be discussed later in the chapter, but first it is just as important to point out the problems with rewards as it is to point out their benefits.

Problems with Rewards

Research on a qualitatively different type of motivation—intrinsic motivation—began with this question: "If a person is involved in an intrinsically interesting activity and begins to receive an extrinsic reward for doing it, what happens to his or her intrinsic motivation for that activity?" (Deci & Ryan, 1985, p. 43). For example, what happens to the motivation of the student who reads for the fun of it but then begins to receive a $2 prize for each book read during a school-sponsored program (e.g., Book it!)? One might suppose that rewarding reading behavior with a monetary prize would add to the student's motivation—that the intrinsic (enjoyment) and extrinsic (money) motivations might sum to produce supermotivation. And if you ask preservice teachers to make predictions about what happens to a student's motivation under these conditions, increased supermotivation is most predicted (Hom, 1994).

Supermotivation does not occur. Rather, the imposition of an extrinsic reward to engage in an intrinsically interesting activity typically undermines (has a negative effect on) future intrinsic motivation (Deci, 1971; Deci, Koestner, & Ryan, 1999; Lepper, Greene, & Nisbett, 1973; Wiechman & Gurland, 2009).

To understand the undermining effect, consider a neuroscience-based test of the undermining effect (Murayama, Matsumoto, Izuma, & Matsumoto, 2010). Participants played an interesting game for two consecutive sessions. During session 1, half of the participants were promised a monetary reward for playing the game, while the other half of the participants simply played the game. Then, during session 2, all participants played the game without rewards involved. Throughout both sessions, researchers recorded participants' neural activations in the brain's reward center (ventral striatum, ventral tegmental area). Participants who played the game without reward experienced activations in the brain's reward center during both sessions 1 and 2 because the game itself was intrinsically motivating. Participants who played the game for reward in session 1 but not in session 2 showed strong activations when playing for reward in session 1 (super-motivation), but those activations literally disappeared when playing for no reward in session 2 (undermining effect). What this study shows is that attractive rewards motivate when offered but actually demotivate when removed.

The reward's adverse effect on intrinsic motivation is termed a "hidden cost of reward" (Lepper & Greene, 1978) because society typically regards rewards as positive contributors to motivation (Boggiano, Barrett, Weiher, McClelland, & Lusk, 1987). Like everyone else, teachers use rewards expecting to gain the benefits of increased motivation and behavior, but, in pursuing these objectives, they often incur the unintentional side effect of undermining intrinsic motivation (Deci, Koestner, & Ryan, 1999; Greene & Lepper, 1974; Lepper & Greene, 1975, 1978; Lepper, Greene, & Nisbett, 1973; Ryan & Deci, 2000; Wiechman & Gurland, 2009). However, rewards do not always undermine intrinsic motivation (Cameron & Pierce, 2002; Deci, Koestner, & Ryan, 1999). Expected, tangible, and contingent rewards ("After you turn in your homework, then you will get a candy bar.") typically undermine intrinsic motivation, but unexpected, verbal, and noncontingent rewards generally do not (Anderson, Manoogian, & Reznick, 1976;

Deci, Koestner, & Ryan, 1999; Henderlong & Lepper, 2002; Lepper, Greene, & Nisbett, 1973; Pallak, Costomiris, Sroka, & Pittman, 1982; Ryan, Mims, & Koestner, 1983; Tang & Hall, 1995).

Expected, tangible, and contingent rewards produce two additional problematic side-effects. They generally interfere with both the *process* and the *quality* of learning. When offered in an expected, tangible, and contingent way, extrinsic rewards tends to shift the student's goal away from optimal challenge, attaining mastery, and focusing on what is to be learned in favor of easy success, attaining reward, and focusing on what is to be gained extrinsically (Harter, 1978; Pittman, Boggiano, & Ruble, 1983; Shapira, 1976). These types of rewards also tend to orient learners toward convergent thinking, trying to get the right answer quickly, and a search for factual knowledge, but away from creativity, divergent thinking, the search for an optimal solution, and the desire to conceptually understand the lesson (Amabile, 1985; Benware & Deci, 1984; Grolnick & Ryan, 1987; Harter, 1978; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004; Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005).

Expected, tangible, and contingent rewards further interfere with students' developmental capacity for autonomous self-regulation (Cannella, 1986; Kohn, 1993; Lepper, 1983; Ryan, 1993). After a history of always being rewarded for doing something, reward recipients understandably begin to have difficulty regulating their behavior when not offered the reward. The student wonders, "Why should I do it?" This reward dependency occurs because the presence vs. absence of rewards—rather than one's own autonomous self-regulation—comes to regulate the initiation and persistence of one's behavior. When these types of rewards are not at stake, students generally engage in academic activities in ways that reflect the rise and fall of their inner motivations, such as curiosity, intrinsic motivation, and personal goals (Joussemet, Koestner, Lekes, & Houlfort, 2004). In contrast, the offering of an attractive extrinsic contingency essentially asks students to neglect and desensitize themselves to their own inner motivations and autonomous self-regulation and instead have their behavior come under environmental (reward) regulation.

COGNITIVE EVALUATION THEORY

When teachers offer students extrinsic rewards, they generally do so because they want to motivate students to engage in a particular, desired behavior. Much of the spirit behind the use of an extrinsic reward is therefore to influence, determine, or outright control a student's behavior. But there is a second purpose behind the offering of rewards. Rewards also provide feedback that informs students about their competence at the task. Rewards not only function to increase behavior (i.e., control behavior) but also to communicate a message of a job well done (i.e., inform competence). This insight on the dual function of rewards raises the practical question of *why* a teacher offers students a reward: Is it to control their behavior, or is it to inform their competence?

Rewards serve two purposes: to elicit a desired behavior (control behavior) and to affirm a job well done (inform competence). According to cognitive evaluation theory, this first purpose is referred to as the "controlling aspect" of a reward, whereas

the second purpose is referred to as its "informational aspect" (Deci & Ryan, 1985). The theory goes farther, however, to state that *all* extrinsic rewards have *both* a controlling aspect and an informational aspect. That is, all rewards both control behavior and inform competence, so the important distinction is whether the teacher's purpose in administering the reward is mostly to control behavior or mostly to inform competence.

Figure 26.2 illustrates cognitive evaluation theory (based on Deci & Ryan, 1980, 1985; Ryan & Deci, 2002). As shown on the left-hand side of the figure, any reward serves the twin purposes of controlling behavior and informing competence. As shown in the upper half of the figure, the more the reward is used to control behavior, the more it will increase extrinsic regulation, frustrate student autonomy, and undermine intrinsic motivation. In general, rewards offered in an expected, tangible, and contingent way ("If you do X, you'll get Y.") are used to control students' behavior and produce these undermining effects. If the reward is not used in a controlling

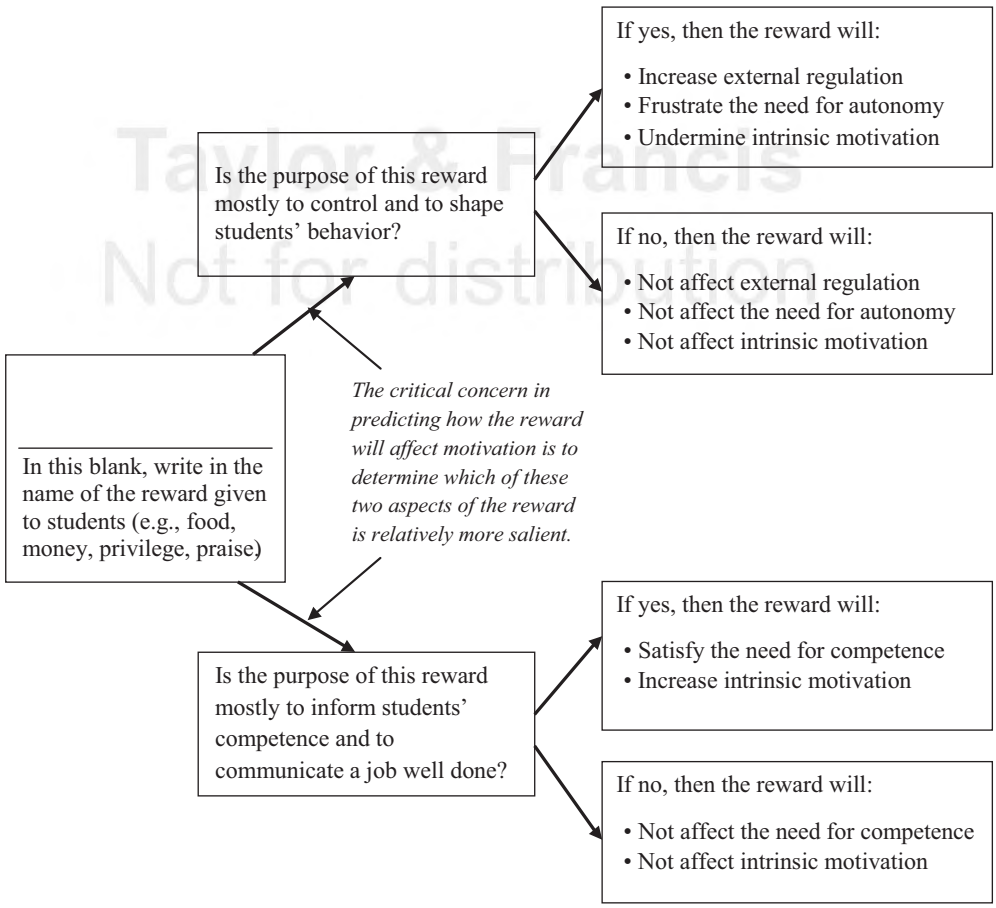

Figure 26.2 Graphical representation of cognitive evaluation theory.

Table 26.1 Three different ways teachers may offer rewards to students.

Type of Offering	Definition and Example
Expected (vs. Unexpected)	Reward given on a prearranged and contingent basis, such as, "If you turn in your homework, then you can expect two bonus points." An unexpected reward is given without a preannounced, prearranged contingency or contract.
Tangible (vs. Verbal)	Reward that the student can touch, smell, see, or taste, such as food or a prize. A verbal reward is one of symbolic value, such as praise or positive feedback.
Contingent (vs. Noncontingent)	Reward given in exchange for carrying out a requested behavior or task. For instance, teacher gives students a reward because he or she completed a worksheet assignment. A noncontingent reward is given irrespective of whether the student actually engages in the behavior or task. The reward is given with no strings (no contingency) attached.

way (if it is offered in an unexpected, verbal, and noncontingent way, such as, "I noticed that you did X well. Congratulations!"), it tends to leave these same student outcomes unaffected. As shown in the lower half of the figure, the more a reward is used to inform competence, the more it will satisfy competence and enhance intrinsic motivation. If the reward is not used in an informational way, however, it tends to leave students' competence and intrinsic motivation unaffected. Tests of cognitive evaluation theory have consistently supported the theory (Deci, Koestner, & Ryan, 1999; Rummel & Feinberg, 1988; Tang & Hall, 1995; Wiersma, 1992).

Offering Rewards

Because rewards can be presented to students in relatively controlling or in relatively informational ways, skill is needed when administering rewards. Table 26.1 summarizes the three different ways that teachers can offer a reward and provides a definition and example for each way.

Expected rewards are typically experienced as highly controlling because they are given on a contractual do-this-get-that basis (Lepper, Greene, & Nisbett, 1973; Pallak, Costomiris, Sroka, & Pittman, 1982). Unexpected rewards, however, are typically experienced as noncontrolling, which allows their competence-affirming informational aspect to become salient. An important practical point, however, is that if the same unexpected reward is repeated over time, then it too becomes an expected reward.

Tangible rewards are rewards that students can see, touch, feel, and taste, such as money, awards, and food. Tangible rewards are typically experienced as controlling because they tend to attract so much of the student's attention that his or her focus shifts from the task to the reward. Verbal rewards, such as praise, positive feedback, awards, and scholarships, however, have symbolic value and are therefore more likely to be experienced as informational events (Anderson, Manoogian, & Reznick, 1976; Dollinger & Thelen, 1978; Kast & Connor, 1988; Swann & Pittman, 1977).

Contingent rewards are those given only in exchange for some service or achievement (the reward depends, or is contingent, on a prespecified service or achievement). Contingent rewards are typically experienced as highly controlling because they are

given simply in exchange for doing what is asked. The more the student perceives that there is a "string attached" (a contingency attached) to the reward, the more he or she will experience it as a controlling event.

Implications

These discussions on (1) the problems with rewards, (2) cognitive evaluation theory, and (3) the skill needed in offering rewards yield two key implications. The first implication is that it is the experience of reward—and not the environmentally offered object itself—that increases motivation and behavior. The experience of reward is a neural event that takes place inside the student (i.e., dopamine release), and this brain activity occurs or fails to occur following the student's perceptions of the quality of the reward, the person/reward fit, the student's need for that reward, the student's perceived value of that reward, how unexpected the reward is, how competence affirming the reward is, and how non contingent the reward is. Thus, teacher-offered rewards sometimes do but other times do not produce in students an experience of reward because it is dopamine release that energizes and directs behavior, not environmental objects themselves such as a sticker, praise, privilege, or money.

The second implication is that why and how the teacher offers the reward is more important than what reward is offered. Unexpected, competence-enriching, and noncontingent rewards increase students' motivation and behavior, and they do so without engendering the problematic hidden costs of rewards. According to cognitive evaluation theory, this means that rewards need to be offered in a noncontrolling, informational way. This implication fundamentally challenges the historical purpose or function of classroom rewards. Rewards have traditionally been recommended ways for teachers to get students to engage in specific, desired, targeted, and teacher-prescribed ways (e.g., "If you clean your desk in the way I showed you and if you clean it before the end of class, then you will gain 5 bonus points."). But the more teachers use extrinsic rewards to control students' behavior, the more motivational, educational, and developmental damage these offerings produce (i.e., undermine intrinsic motivation, interfere with learning, and undermine autonomous self-regulation).

All this notwithstanding, reward-induced external regulation is not always bad or counterproductive (Covington & Mueller, 2001). Recognizing this, researchers and practitioners alike have tried to use rewards in ways that minimize their hidden costs. One way to do this, as discussed, is to use rewards that are unexpected and verbal (e.g., praise) and refrain from using those that are expected and tangible (e.g., bribes). This actually turns out to be harder to do than first meets the eye. The experienced teacher needs simply to reflect on how and why each of the following rewards is typically offered in the classroom setting: grades, gold stars, bonus points, check marks, awards, trophies, certificates, honor roll lists, prizes, scholarships, privileges, public recognition, food, parties, celebrations, money, and incentive plans of all kinds (i.e., expected, tangible, and contingent offers to get students to do what the teacher requests).

A second means to limit the hidden costs of rewards is to use them only on those tasks and behaviors that have low intrinsic interest but high social importance. A key practical question is whether rewards will have detrimental effects on *un*interesting tasks. In other words, if, with respect to a given task, a student has little or no intrinsic motivation to undermine, then intrinsic motivation is not likely to be put at risk by offering a reward. Indeed, research shows that the negative impact of rewards on intrinsic motivation is limited to interesting activities (Deci et al., 1999). Under conditions of low interest but high social importance, teachers offer rewards because their experience tells them that, without a reward at stake, students will not sit quietly, participate in class, and start their homework. Given this dilemma, some educators come to the practical conclusion that it is fine and well to use expected, tangible, and contingent extrinsic rewards when students' intrinsic motivation is low (Witzel & Mercer, 2003). This is a mistake, however, because even if they increase students' compliance, expected, tangible, and contingent rewards still undermine the quality of performance, interfere with the process and quality of learning, and undermine autonomous self-regulation. Their use under these conditions also distracts teachers' attention away from asking the hard question of why they are asking students to do uninteresting tasks, and it fails to acknowledge that there are better ways than bribery to encourage students' classroom engagement (Kohn, 1993).

FROM TARGETING BEHAVIOR TO SUPPORTING ENGAGEMENT

Within a behavioral framework, controlling classroom management strategies makes sense. A controlling approach represents an ideal way to manage students' behavior—that is, to produce students' on-task, teacher-prescribed behavior. Offering rewards (and offering positive reinforcers in particular) certainly has its place with such an approach to classroom management. It is helpful, however, to step back and ask whether there might be merit in expanding one's approach to classroom management beyond the relatively narrow goal of targeting behavior (via rewards) to the more general classroom aspiration of supporting students' classroom engagement. To speak to this larger goal, the chapter introduces the two classroom management strategies of providing structure and providing autonomy support.

Teacher-Provided Structure

Classroom behavior does not need to be controlled, targeted, or prescribed. It may alternatively be guided, mentored, and supported. With teacher control, the teacher tries to transition the students from "not doing X" to "doing X" (from "not cooperating with peers" to "cooperating with peers"). With guidance, mentoring, and support, the teacher tries to help the student advance his or her way of behaving from a relatively immature, poor functioning, and maladaptive pattern of activity toward one that is more mature, better functioning, and adaptive. To help students advance toward such a constructive way of behaving, teachers can provide rewards, but they can further offer clear expectations of what student are to do, endorse high standards for behavior and achievement, provide step-by-step how-to directions, set

goals, make plans, offer suggestions, provide help and assistance, make available role models to emulate, and administer feedback (Brophy, 1986; Skinner, 1995). That is, teachers might advance from offering rewards to providing structure.

Structure refers to the amount and clarity of information that teachers provide to students regarding what to do, how to do it, and the best ways to develop the desired skills and achieve valued outcomes (Farkas & Grolnick, 2010; Grolnick & Pomerantz, 2009; Skinner, Zimmer-Gembeck, & Connell, 1998). At the opposite end of structure are chaos and confusion. Confused students do not know what to do (e.g., "What should I do?"). Generally speaking, the more teachers provide students with a highly structured classroom environment, the more they prepare students for effective classroom behavior and grow a sense of competence that helps them develop the skills and attain the outcomes they seek (Skinner, Zimmer-Gembeck, & Connell, 1998). In practice, teacher-provided structure is typically a three-step process of (1) communicating clear expectations and high standards, (2) helping students to adjust their behavior in ways that will allow them to meet those expectations and standards, and (3) providing a future pathway to more effective functioning. Rewards can and do play an important role in the delivery of a highly structured classroom, but the use of rewards is only a subset of the larger classroom management concept of structure.

Figure 26.3 provides a three-part framework to illustrate not only a highly structured classroom environment but also the role of rewards within that structured

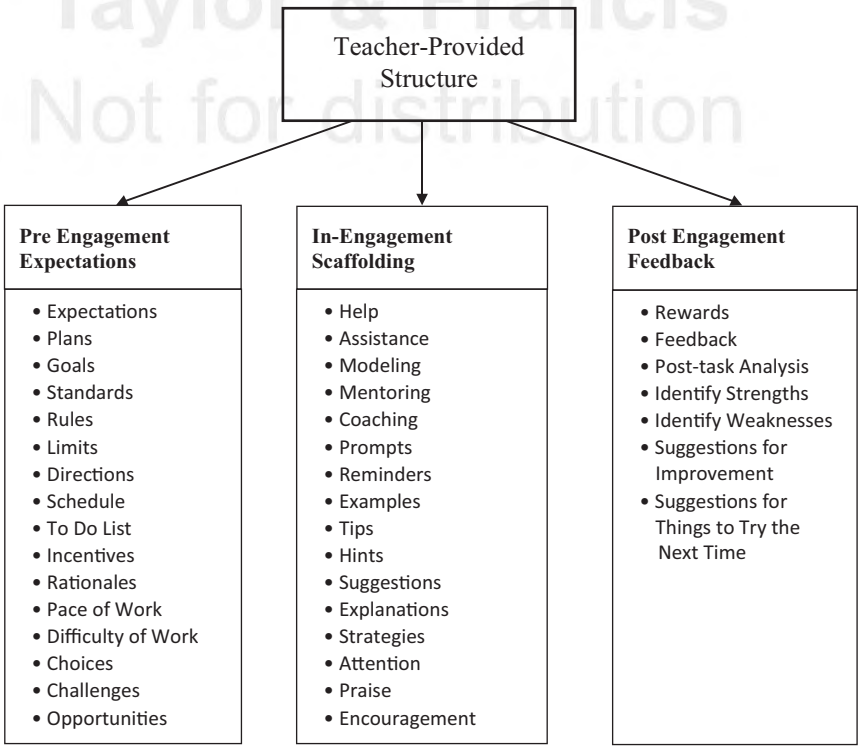

Figure 26.3 Elements of teacher-provided classroom structure.

environment. Before asking students to engage themselves in a learning activity (solve a math problem) or in a stream of behavior (show social skill during group interaction), the teacher prepares students by communicating his or her expectations, standards, and a script for what students will be asked to do. What all these aspects of structure shown on the left-hand side of Figure 26.3 have in common is that they help students formulate intentions to act. If rewards are used at this point in the lesson, they are usually offered as incentives in exchange for students' service. As students engage themselves in the learning activity or in the stream of behavior, the teacher helps students develop competence and skill by providing modeling, coaching, scaffolding, hints, suggestions, and encouragement. What all these aspects of structure shown in the middle of Figure 26.3 have in common is that they help students develop greater competence and skill. If rewards are used at this point in the lesson, they are usually employed as behavioral supports to maintain students' positive emotion and on-task behavior. As students complete the learning activity or stream of activity, the teacher provides feedback, analysis, and a reflective commentary to ready students for future learning and behavioral opportunities. What all these aspects of structure on the right-hand side of Figure 26.3 have in common is that they help students adjust and revise their goals, intentions, strategies, and sense of what needs to be done differently during future encounters with the same learning activity or stream of behavior. If rewards are used at this point in the lesson, they are given either spontaneously or in exchange for students' achievement.

Student Engagement

Engagement refers to how actively involved a student is in a learning activity (Christenson, Reschly, & Wylie, 2012). As shown in Figure 26.4, engagement is a multidimensional construct that consists of the four distinct, yet intercorrelated and mutually supportive aspects of behavior, emotion, cognition, and agency (Christenson, Reschly, & Wylie, 2012; Fredricks, Blumenfeld, & Paris, 2004; Reeve, 2013; Reeve & Tseng, 2011; Skinner, Kindermann, Connell, & Wellborn, 2009). Behavioral engagement refers to how involved the student is during a learning activity in terms of on-task attention, exertion of effort, and persistence. This aspect of student engagement is widely emphasized in discussions of classroom management strategies. Emotional engagement refers to the presence of positive emotions during task involvement such as curiosity and interest and to the absence of negative emotions such as anxiety and anger. Cognitive engagement refers to how strategically the student attempts to process information and to learn in terms of employing sophisticated rather than superficial learning strategies (e.g., elaboration rather than memorization). Agentic engagement refers to how proactive the student is in contributing constructively to the flow of the instruction he or she receives in terms of asking questions, expressing preferences, and letting the teacher know what he or she wants and needs.

Engagement is important because it functions as a student-initiated pathway to highly valued educational outcomes, such as academic progress and achievement (Jang, Kim, & Reeve, 2012; Ladd & Dinella, 2009; Skinner, Kindermann, Connell, & Wellborn, 2009; Skinner, Zimmer-Gembeck, & Connell, 1998). Engagement is what

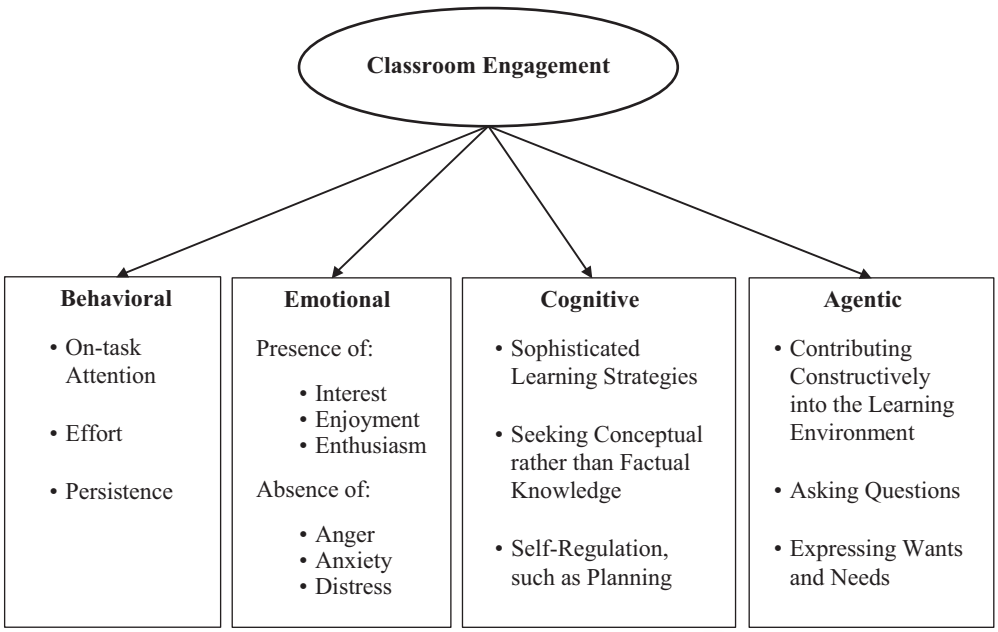

Figure 26.4 Four interrelated and mutually supportive aspects of students' classroom engagement.

students do to make academic progress; it is what students do to know, understand, and achieve. To make progress in learning a foreign language, for instance, students can pay close attention to sources of information, invest effort, and persist in the face of setbacks, which is behavioral engagement. Or they can enhance their curiosity and minimize their anxiety and frustration, which is emotional engagement. Or students can apply sophisticated learning strategies and carry out mental simulations to diagnose and solve problems, which is cognitive engagement. Or, proactively, students can contribute to the flow of instruction they receive, both to personalize that instruction and to negotiate for the interpersonal support they need to energize their motivation and learning.

Inner Motivational Resources

Environmentally offered rewards can be used to promote students' behavioral engagement, but the motivational source of the fuller four-dimensional conceptualization of engagement typically lies outside of reward. Classroom engagement arises out of and overtly expresses the underlying status of students' inner motivational resources. An inner motivational resource is an inherent energizing, directing, and sustaining force that all students possess, irrespective of their age, gender, nationality, or academic ability that, when supported, vitalizes engagement and enhances well-being. In a motivational analysis, inner motivational resources such as curiosity, interest/intrinsic motivation, and psychological needs provide the ultimate source of students' classroom engagement in learning activities (Reeve,

Deci, & Ryan, 2004). When classroom environments involve, nurture, and support students' inner motivational resources during instruction, students show strong classroom engagement (just as students show disengagement when the classroom environment neglects or frustrates their inner motivational resources) (Jang, Kim, & Reeve, 2012; Reeve, 2013).

Teacher-Provided Autonomy Support

Autonomy support is what teachers say and do during instruction to support students' inner motivational resources. When autonomy supportive, teachers strive to identify, nurture, and vitalize the inner motivational resources listed in the previous section (Reeve, 2009). The opposite of autonomy support is teacher control. When controlling, teachers pressure students to think, feel, and behave in a teacher-prescribed way. Generally speaking, the more teachers support student autonomy, the more students experience a personal endorsement of their own thinking (goals), feeling (emotions), and behaving (actions). "Personal endorsement of one's behavior" is a conceptual synonym for autonomy (Ryan & Deci, 2000), and the more autonomous students are during classroom learning activities and streams of behavior, the more behavioral, emotional, cognitive, and agentic engagement they show (Reeve, 2013). In practice, teacher-provided autonomy support can be understood within the same three-step framework provided earlier in the discussion of structure. When autonomy supportive, teachers first work to take the students' perspective and then, secondly, vitalize students' inner motivational resources so that their autonomous motivation (rather than a teacher's environmental incentives and rewards) energizes and directs classroom activity; lastly, teachers return to the effort to take the students' perspective so that future instruction can be redesigned to better incorporate students' inner motivational resources into tomorrow's instruction (Deci & Ryan, 1985; Reeve, 2009).

Figure 26.5 provides a three-part framework to illustrate a highly autonomy-supportive classroom environment. Before asking students to engage in a learning activity or in a stream of behavior, the teacher adopts the students' perspective and frame of reference on the forthcoming lesson (e.g., Is it interesting? Is it relevant to student's personal goals? What would students want to change about this lesson?). To help inform the teacher's design of instruction, he or she invites and welcomes students' suggestions about the lesson and incorporates their thoughts, feelings, and behaviors into the lesson plan and learning objective. What the aspects of autonomy support on the left-hand side of Figure 26.5 have in common is that the teacher extends his or her own goals, priorities, and agenda (i.e., perspective) for the upcoming lesson to incorporate students' goals, priorities, and agenda. As students engage themselves in the learning activity or in the stream of behavior, the teacher introduces elements of instruction that can vitalize students' inner motivational resources, provides explanatory rationales for requests, uses informational language, displays patience, and acknowledges and accepts students' complaints and expressions of negative affect. What all these aspects of autonomy support, shown in the middle of Figure 26.5, have in common is that they allow student activity to flow

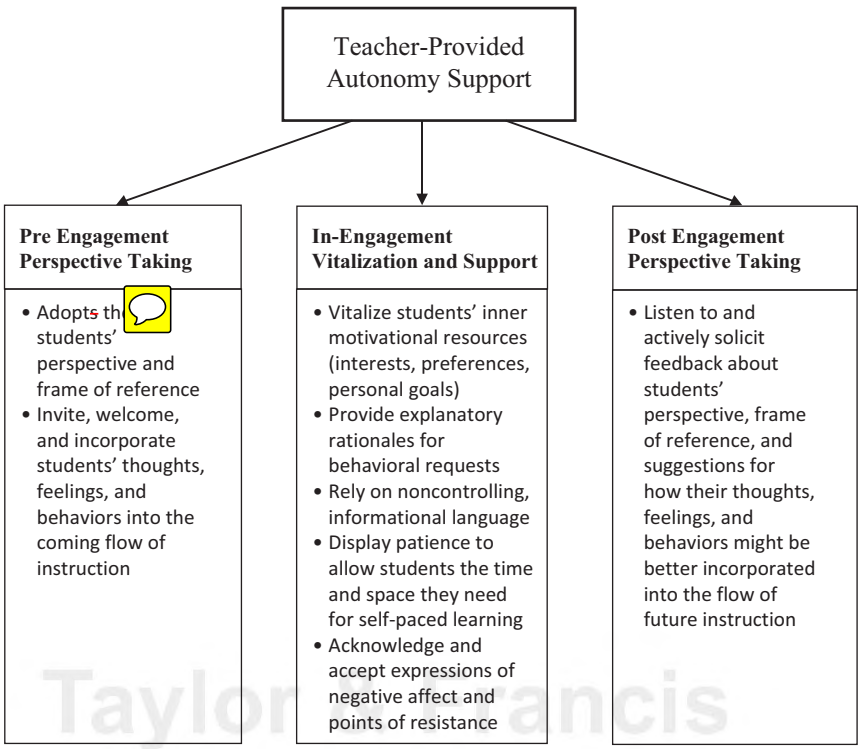

Figure 26.5 Elements of teacher-provided autonomy support.

out of an internal locus of causality, a sense of volitional freedom, and a perception of choice (i.e., autonomy) (Reeve, Nix, & Hamm, 2003). As students complete the learning activity, the teacher listens carefully and actively solicits students' inputs and suggestions for how to incorporate students' need for autonomy into tomorrow's instruction and classroom activity. What the aspects of autonomy support, shown on the right side of Figure 26.5, have in common is that the teacher seeks ways to develop students' capacity for greater autonomous self-regulation.

Several classroom-based studies confirm that teacher-provided autonomy support—operationally defined objectively by trained raters' assessments and subjectively by students' perceptions (Reeve & Jang, 2006; Su & Reeve, 2011)—predicts high levels of students' inner motivational resources (e.g., psychological need satisfaction, intrinsic motivation) (Cheon & Reeve, 2013; Cheon, Reeve, & Moon, 2012), classroom engagement (Reeve, Jang, Carrell, Jeon, & Barch, 2004), and positive educational outcomes (e.g., conceptual learning, skill development, and achievement) (Cheon, Reeve, & Moon, 2012; Reeve, 2009).

Other studies show that teachers do not need to make a decision between "offer structure" or "support autonomy" because structure and autonomy support work in complementary and synergistic ways to promote student motivation and positive classroom functioning (Jang, Reeve, & Deci, 2010; Sierens, Vansteenkiste, Goossens,

Soenens, & Dochy, 2009). As one case in point, it is a constructive mental exercise to take literally any individual element of structure listed in Figure 26.3 and ask the question, "How can I, as a classroom teacher, provide that aspect of structure to students in a highly autonomy supportive way?" As a point of reference, one group of researchers showed how classroom teachers can provide elementary-grade students with rules and limits in an autonomy supportive way and what the motivational, behavioral, and developmental fruits of doing so were (Koestner, Ryan, Bernieri, & Holt, 1984).

EPILOGUE

Given the preceding discussion, a final question that needs to be addressed is why teachers are still so often controlling in the classroom and why teachers continue to use rewards in expected, tangible, and contingent ways (Reeve, 2009). For the past decade, I have hosted many in-service events to help experienced teachers become more autonomy supportive toward their students (Cheon & Reeve, 2013; Cheon, Reeve, & Moon, 2012; Reeve, Jang, Carrell, Jeon, & Barch, 2004). A key part of all these visits is to explain the benefits of autonomy support and the costs of teacher control. This is always a controversial discussion. This is so because many teachers believe in the effectiveness and necessity of teacher control. They ask, "Well, how do you get the motivated engagement in the first place?" I recommend that teachers continue to offer all the external events and elements of structure that they have offered in the past, extrinsic rewards included, but to experiment with presenting these classroom objects and events in an autonomy-supportive way (for examples, see Reeve, 2009). A script, schedule, goal, or expectation often provides an initial engagement spark, but for that engagement to persist and include cognitive and agentic aspects of engagement (in addition to behavioral aspects), the chosen element of structure needs to be provided in an autonomy-supportive way (Jang, Reeve, & Deci, 2010). While I espouse a motivation-based "support engagement" paradigm, my viewpoint is not accepted by all, particularly scholars with strong behavioral beliefs and perspectives on classroom management for difficult-to-teach students (e.g., Alberto & Troutman, 2013; Kerr & Nelson, 2010; Scheuermann & Hall, 2012; Witzel & Mercer, 2003).

In addition, I recommend teachers consider new instructional strategies to vitalize students' otherwise dormant inner motivational resources, such as asking a curiosity-inducing question, offering an optimal challenge to involve the psychological need for competence, or framing the learning activity as an opportunity for personal growth to involve an intrinsic goal. As they enact these alternative motivation- and engagement-fostering instructional strategies, I ask teachers to keep an eye out for an immediate and rather pronounced spike in students' classroom engagement. Sometimes I get asked back to the school and therefore have the chance to follow up on teachers' classroom experiences. They always smile because classroom life is much improved, and it tends to improve not only for the students (in terms of motivation, engagement, and learning) (Cheon, Reeve, & Moon, 2012) but for the teachers as well.

The positive response from teachers was so consistent that Sung Hyeon Cheon and I conducted an experimentally designed, longitudinal study to assess the *teacher* benefits of offering greater autonomy support. Compared to a control group of teachers who used their existing motivating style throughout the semester, teachers who participated in an intervention program designed to help them incorporate autonomy-supportive instructional behaviors showed greater teaching efficacy, greater passion for teaching, greater psychological need satisfaction of their own, greater vitality (energy) while teaching, higher job satisfaction, and lesser postclass emotional exhaustion (Cheon & Reeve, ~~2014~~). What teacher could ask for more?

NOTES

1. This writing of this chapter was supported by the WCU (World Class University) Program, funded by the Korean Ministry of Education, Science and Technology, consigned to the Korea Science and Engineering Foundation (Grant no. R32–2008–000–20023–0).
2. ~~This~~ neuroscientific analysis on reward can be considered a modern update on E. L. Thorndike's (1932) well-known law of effect. According to the law of effect, behaviors that have good effects tend to become more frequent, whereas behaviors that have bad effects tend to become less frequent. "Good effects" in a neuroscientific analysis are defined by dopamine release in the subcortical brain's reward center.

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