A Self-determination Theory Perspective on Student Engagement*

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Johnmarshall Reeve

Abstract

This chapter pursues three goals. First, it overviews self-determination theory (SDT). SDT is a macrotheory of motivation comprised of five interrelated minitheories—basic needs theory, organismic integration theory, goal contents theory, cognitive evaluation theory, and causality orientations theory. Each minitheory was created to explain specific motivational phenomena and to address specific research questions. Second, the chapter uses the student-teacher dialectical framework within SDT to explain how classroom conditions sometimes support but other times neglect and frustrate students' motivation, engagement, and positive classroom functioning. Third, the chapter highlights student engagement. In doing so, it overviews recent classroom-based, longitudinally designed research to reveal three new and important functions of student engagement—namely, that student engagement fully mediates and explains the motivation-to-achievement relation, that changes in engagement produce changes in the learning environment, and that changes in engagement produce changes in motivation, as students' behavioral, emotional, cognitive, and agentic engagements represent actions taken not only to learn but also to meet psychological needs. The chapter concludes with implications for teachers and with suggestions for future research.

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J. Reeve (✉)
Department of Education, Korea University,
Anam-Dong, Seongbuk-Gu Seoul, 136-701 Korea
e-mail: reeve@korea.ac.kr

Watch as a student engages herself in a learning activity. What catches your eye? What really matters in terms of whether she will learn something new or develop her skills? What unseen motivational processes contribute to and explain her attention, effort, emotionality, strategic thinking, and sense of initiative and agency? As you watch the ebb and flow of her engagement, can

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you predict what will happen next? Can you predict what she will and will not do in the coming minute? If you were to provide some assistance (the way a teacher might), what would you say? What would you do?

Using the eyes and experience of the teacher and using the theory and tools of the researcher, the present chapter reflects on these questions to pursue three goals. First, the chapter overviews self-determination theory (SDT). SDT is a theory of motivation that helps researchers and practitioners alike to understand and enhance not only student motivation but also the engagement that arises out of that motivation. It is a macrotheory of motivation comprised of five interrelated mini-theories, including basic needs theory, organismic integration theory, goal contents theory, cognitive evaluation theory, and causality orientations theory (Ryan & Deci, 2002; Vansteenkiste, Niemiec, & Soenens, 2010). Second, using an SDT perspective, the chapter explains how classroom conditions sometimes support but other times interfere with students' motivation, engagement, and positive school functioning. The focus in this discussion will be on the student-teacher dialectical framework that is embedded within an SDT analysis. Third, the chapter highlights student engagement. Recent classroom-based, longitudinally designed research has produced several new and important insights into defining, understanding, and promoting students' engagement. In the discussion of these new findings, particular emphasis will be paid to the functions of student engagement.

Three Questions

To help readers compare, contrast, and integrate the various chapters of the *Handbook of Research on Student Engagement*, the editors asked each contributing author team to address the following three questions:

1. What are your definitions of engagement and motivation, and how do you differentiate between the two?
2. What overarching framework or theory do you use to study and explain engagement or motivation?
3. What is the role of context in explaining engagement or motivation?

What Is Engagement? What Is Motivation? How Do You Differentiate the Two?

Engagement refers to the extent of a student's active involvement in a learning activity, a definition borrowed from Wellborn's (1991) pioneering work on the subject. The definitional emphasis on "learning activity" is important because the present chapter focuses rather narrowly on engagement as a task- or domain-specific event, as the student is engaged in a particular learning activity (for a matter of minutes) or in a particular course (for a matter of months).

Engagement is a multidimensional construct. As depicted in Fig. 7.1, engagement features four distinct, but highly intercorrelated, aspects. Each of these four aspects will be discussed in depth in the chapter, but for now recall the observational episode from the opening paragraph in which you might find yourself observing a student reading, practicing, or playing. From the perspective of the present chapter, making a judgment of how actively involved the student was in the learning activity would involve assessments of her concentration, attention, and effort (behavioral engagement), the presence of task-facilitating emotions such as interest and the absence of task-withdrawing emotions such as distress (emotional engagement), her usage of sophisticated rather than superficial learning strategies (cognitive engagement), and the extent to which she tries to enrich the learning experience rather than just passively receive it as a given (agentic engagement).

Motivation refers to any force that energizes and directs behavior (Reeve, 2009a). Energy gives behavior its strength, intensity, and persistence. Direction gives behavior its purpose and

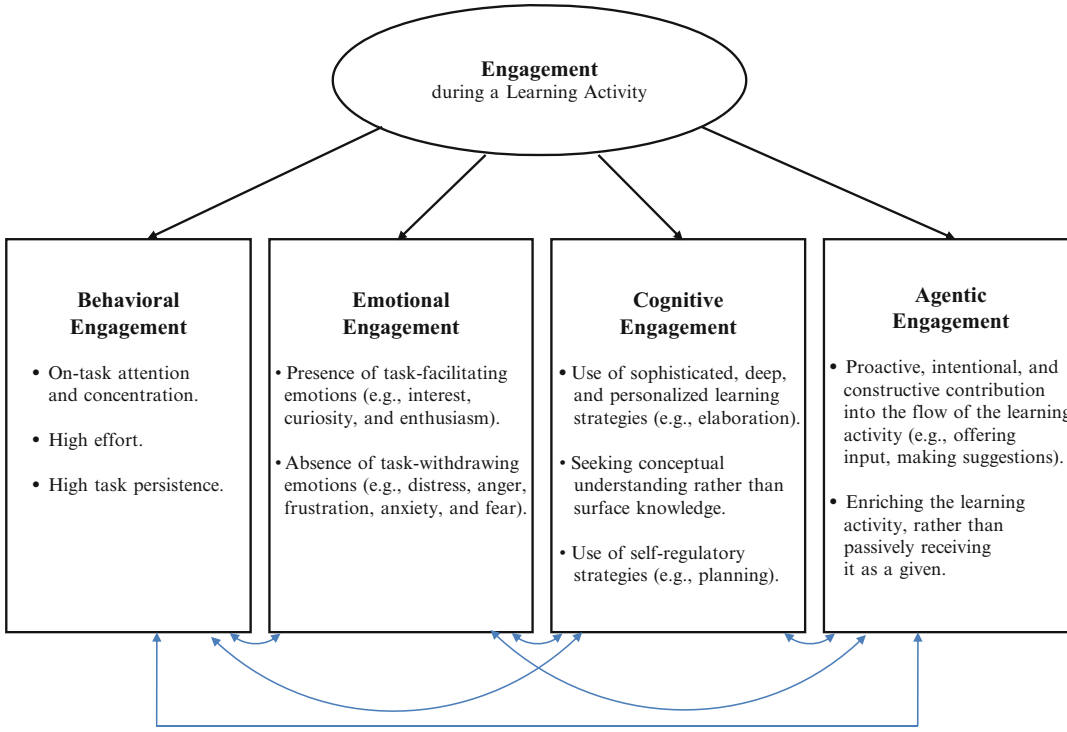

Fig. 7.1 Four interrelated aspects of students' engagement during a learning activity

goal-directedness. While motivation arises from many different sources (e.g., needs, cognitions, emotions, environmental events), it is viewed in the present chapter from a needs-based perspective within the self-determination theory framework; hence, motivation is equated with students' psychological need satisfaction. That is, students who perceive themselves to be acting with a sense of autonomy, competence, and relatedness during the learning activity experience high-quality motivation, while those who have these three needs neglected or frustrated during instruction experience low-quality motivation.

The distinction between the two constructs is that motivation is a private, unobservable psychological, neural, and biological process that serves as an antecedent cause to the publically observable behavior that is engagement. While motivation and engagement are inherently linked (each influences the other), those who study motivation are interested in engagement mostly as an outcome of motivational processes, whereas those who study engagement are interested mostly in motivation as a source of engagement. So, motivation is the relatively more private, subjectively experienced cause, while engagement is the relatively more public, objectively observed effect.

What Overarching Framework Informs Your Understanding of Motivation and Engagement?

Self-determination theory provides the overarching theoretical framework to guide my research questions and empirical study of both motivation

and engagement. A particular emphasis is placed on the student-teacher dialectical framework embedded within SDT. Both of these frameworks will be presented in the present chapter.

What Is the Role of Context in Explaining Engagement or Motivation?

Students have needs, goals, interests, and values of their own, and these motivations sometimes manifest themselves in a context-free way, as when a student adopts a mastery goal orientation across all achievement contexts. These motivations also express themselves when student are alone, as when an adolescent clicks on a web page, finds it interesting, and reads about the topic for hours, all in the privacy of his or her personal time on a computer. When students are in the classroom, however, context matters. In the classroom, students live and interact in a social world that offers supports for and threats against their needs, goals, interests, and values. In the classroom, the teacher and the learning environment are so instrumental in supporting versus frustrating student motivation and engagement that it almost does not make sense to refer to "student" engagement because it cannot be separated or disentangled from the social context in which it occurs. That is, every student's classroom engagement is invariably a joint product of his or her motivation and classroom supports versus thwarts.

This view on the role of context in motivation and engagement foreshadows three implications. First, to flourish, student motivation and student engagement need supportive conditions, especially supportive student-teacher relationships. Second, the role of the teacher (or the classroom context more generally) is not to create or manufacture student motivation or engagement. Rather, the teacher's role is to support the student motivation and engagement that is already there and to do so in a way that allows for high- (rather than low-) quality motivation and engagement. Third, it is only partially valid to think of the relations among social context, motivation, engagement, and student outcomes in a linear fashion (i.e., social context → motivation → engagement → outcomes) because one also needs to think about these relations in a reciprocal way.

Self-determination Theory

Self-determination theory (SDT) is a theory of motivation that uses traditional empirical methods to build its theory and to inform its classroom applications. The theory, which has been 40 years in the making, assumes that all students, no matter their age, gender, socioeconomic status, nationality, or cultural background, possess inherent growth tendencies (e.g., intrinsic motivation, curiosity, psychological needs) that provide a motivational foundation for their high-quality classroom engagement and positive school functioning (Deci & Ryan, 1985a, 2000; Reeve, Deci, & Ryan, 2004; Ryan & Deci, 2000, 2002; Vansteenkiste et al., 2010). While other motivation theories explain how students' expectations, beliefs, and goals contribute to their classroom engagement, self-determination theory is unique in that it emphasizes the instructional task of *vitalizing* students' inner motivational resources as the key step in facilitating high-quality engagement (Reeve & Halusic, 2009). That is, SDT identifies the inner motivational resources that all students possess, and it offers recommendations as to how teachers can involve, nurture, and vitalize these resources during the flow of instruction to facilitate high-quality student engagement (Niemiec & Ryan, 2009).

The theory acknowledges that students sometimes lack self-motivation, display disaffection, and act irresponsibly. To resolve this seeming paradox of possessing inner motivational resources on the one hand yet displaying disaffection on the other, SDT research identifies the classroom conditions that support and vitalize students' inner motivational resources versus those that neglect, undermine, and thwart them (Deci & Ryan, 1985a; Reeve et al., 2004; Ryan & Deci, 2000). In doing so, SDT addresses how students' inner resources interact with classroom conditions to result in varying levels of students' engagement.

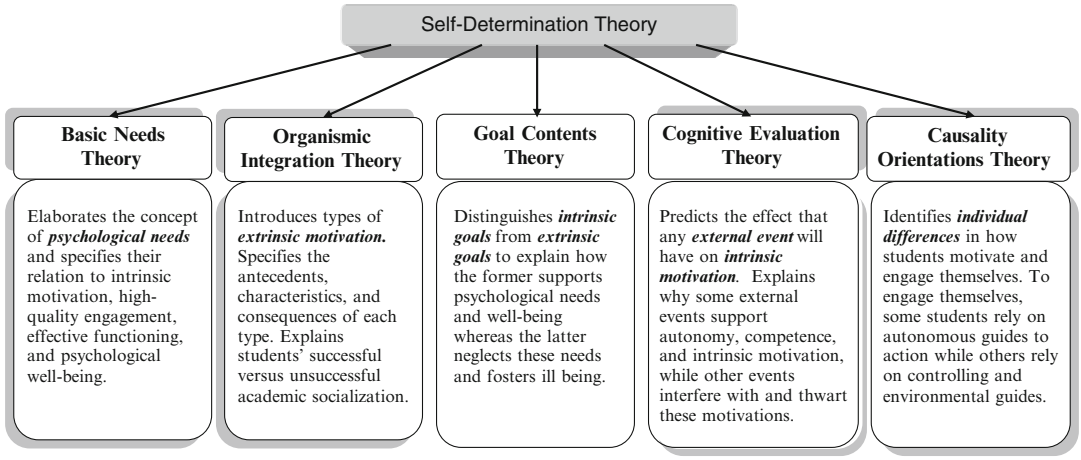

Fig. 7.2 Five minitheories of self-determination theory and the motivational phenomena each was developed to explain

As SDT research has advanced, different motivational phenomena (e.g., intrinsic motivation) and different research questions (e.g., how do extrinsic rewards affect intrinsic motivation?) have emerged and required empirical study. As summarized in Fig. 7.2, five minitheories emerged to explain these motivational phenomena and to answer their associated research questions. *Basic needs theory* focuses on psychological needs as inherent inner motivational resources and specifies their foundational and nutriment-like relation to students' motivation, high-quality engagement, effective functioning, and psychological well-being. *Organismic integration theory* focuses on internalization and why students initiate socially important, but not intrinsically motivating, behaviors. It represents SDT's theory of extrinsic motivation, specifies types of extrinsic motivation, and explains students successful versus unsuccessful academic socialization. *Goal contents theory* focuses on the "what" of motivation—what goals students strive for—to distinguish intrinsic from extrinsic goals. This minitheory explains how intrinsic goals support psychological need satisfaction and foster well-being and also how extrinsic goals neglect psychological needs and foster ill-being. *Cognitive evaluation theory* explains how external events (e.g., rewards, feedback) affect intrinsic motivational processes, as external events sometimes support but other times interfere with and thwart students' psychological needs and perceptions of autonomy and competence. *Causality orientations theory* highlights individual differences in how students motivate themselves. To initiate and sustain their classroom engagement, some students tend to rely on autonomous and self-determined guides to action, while others tend to rely on controlled and environmentally determined guides.

Basic Needs Theory

Basic needs theory identifies the three psychological needs of autonomy, competence, and relatedness as the source of students' inherent and proactive intrinsically motivated tendency to seek out novelty, pursue optimal challenge, exercise and extend their capabilities, explore, and learn. *Autonomy* is the psychological need to experience behavior as emanating from and as endorsed by the self; it is the inner endorsement of one's behavior (Deci & Ryan, 1985a). Students experience autonomy need satisfaction to the extent to which their classroom activity affords them opportunities to engage in learning activities with an internal locus of causality, sense of psychological freedom, and perceived choice

over their actions (Reeve, Nix, & Hamm, 2003). *Competence* is the need to be effective in one's pursuits and interactions with the environment. It reflects the inherent desire to exercise one's capacities and, in doing so, to seek out and master environmental challenges (Deci, 1975). *Relatedness* is the need to establish close emotional bonds and secure attachments with others. It reflects the desire to be emotionally connected to and interpersonally involved in warm, caring, and responsive relationships (Deci & Ryan, 1991). Students experience relatedness need satisfaction to the extent to which they relate to others in an authentic, caring, and reciprocal way (Ryan, 1993).

Basic needs theory contributes to the overarching SDT framework in three important ways. First, basic needs theory identifies the origin of students' active nature in the three psychological needs (Deci & Ryan, 2000). In this way, basic needs theory presents psychological need satisfaction as its unifying principle (Vansteenkiste et al., 2010), as psychological needs energize engagement and are conceptualized as psychological nutriments that the daily life events need to fulfill if one is to be psychologically, physically, and socially well. Second, basic needs theory explains *why* students sometimes show active engagement in learning activities but other times show a passive or even antagonistic involvement, as need satisfaction promotes active engagement, whereas the neglect and thwarting of these needs anticipates various manifestations of disaffection (Deci & Ryan, 2000; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Sheldon, Ryan, & Reis, 1996). Third, the three needs provide the basis for predicting a priori which aspects of the classroom environment will be supportive versus undermining of students' engagement—namely, those conditions that affect students' perceptions of autonomy, competence, and relatedness (Deci, Koestner, & Ryan, 1999). This study of how teachers support students' autonomy has been the foundation of my own program of research on teachers' autonomy-supportive versus controlling motivating styles (e.g., Reeve, 2009b) as well as others' research on competence support and relatedness support (e.g., Skinner & Belmont, 1993).

Organismic Integration Theory

Organismic integration theory recognizes that students engage in many behaviors that are inherently interesting or enjoyable. It is probably the case that most behaviors students engage in at school are extrinsically motivated and enacted as a means to an outcome that is separate from the engaged task itself, such as practicing a musical instrument to develop skill or to please a teacher, rather than simply enjoying the playing itself. Organismic integration theory explains under which conditions students do, do not, and only sort of acquire, internalize, and integrate extrinsic motivational processes into the self-motivation system. It proposes that students are naturally and volitionally inclined to internalize aspects of their social surroundings and to integrate some of these values and ways of behaving as acquired motivations. That is, students want to internalize societal norms, rules, and behaviors; indeed, they proactively seek out such opportunities. The motivation to internalize societal prescriptions ("do this") and proscriptions ("don't do that") exists because students naturally want to discover new ways to increase their competence in the social world and to relate the self more closely to others (e.g., shared values, shared goals, greater sense of community). To the extent that students internalize and integrate healthy external regulations (i.e., achieve "organismic integration"), they experience greater autonomy and show relatively more positive functioning in the relevant domain, including the school context (Ryan, 1993; Ryan & Connell, 1989).

According to organismic integration theory, extrinsic motivation (unlike intrinsic motivation) is a differentiated construct. Different types of extrinsic motivation are associated with different degrees of autonomous motivation. To be autonomous is not so much to be free from external forces; rather, students experience autonomy in accordance with how much they personally endorse the value and significance of the way of thinking or behaving. Because students feel varying degrees of ownership of their beliefs and behaviors, the four types of extrinsic motivation can be conceptualized along a unipolar continuum of autonomous motivation.

External regulation is the least autonomous type of extrinsic motivation. It exists as a contingency-based "in order to" type of motivation in which the student engages in an activity in order to obtain a reward or in order to avoid a punishment. With external regulation, the personal value of the behavior itself is very low. *Introjected regulation* is slightly autonomous extrinsic motivation. With introjected regulation, the student complies with external requests to affirm or maintain self-worth in the eyes of others or to silence a self-esteem threat (avoid feeling guilty or ashamed). Both external regulation and introjected regulation are associated with an external perceived locus of causality, sense of pressure, and perceived obligation (i.e., controlled motivation). Moving up the ladder of autonomous types of extrinsic motivation, *identified regulation* represents an autonomous type of extrinsic motivation. With identified regulation, the student sees value in the external regulation ("that is important, useful") and willingly transforms it into a self-endorsed (internalized) regulation that has a sense of choice and personal commitment behind it. *Integrated regulation* is the most autonomous type of extrinsic motivation. It occurs as the student evaluates and brings an identification into coherence with other aspects of the self-system, as when "studying hard on this assignment" is brought into the "I'm a scholar" sense of self. Integrated regulation approximates intrinsic motivation in its degree of self-determination, though the two motivational constructs clearly differ, as integrated regulation is based on the importance of the activity and requires considerable reflection and self-awareness, whereas intrinsic motivation is based on interest in the activity and emerges spontaneously. Both identified regulation and integrated regulation are associated with an internal perceived locus of causality, sense of psychological freedom, and perceived choice (i.e., autonomous motivation).

In adding organismic integration theory to the SDT framework, SDT ceased contrasting intrinsic motivation against extrinsic motivation and now distinguishes between autonomous motivation and controlled motivation (Vansteenkiste et al., 2010). Organismic integration theory nicely complements basic needs theory in the overall SDT framework, as basic needs theory identifies students' inherent motivational resources, whereas organismic integration theory identifies students' acquired motivational resources.

Goal Contents Theory

Organismic integration theory was created to answer questions of *why* people engage in uninteresting activities—why does he study? Why does he participate in class? Why does he do his homework? In contrast, goal contents theory was created to answer questions of *what* people strive to attain—what is his goal while studying? What is her goal as she participates in class? Goal contents theory arose out of the distinction between intrinsic and extrinsic goals (or intrinsic and extrinsic aspirations) and out of the finding that the differing goal content affects motivation and well-being in different ways (Ryan, Sheldon, Kasser, & Deci, 1996; Vansteenkiste, Lens, & Deci, 2006). Specifically, engagement in pursuit of intrinsic goals such as personal growth and deeper interpersonal relationships affords basic need satisfactions and thus enhances effort and psychological well-being, whereas engagement in pursuit of extrinsic goals such as enhanced status, increased popularity, or material success neglects basic need satisfactions and therefore foreshadows ill-being (e.g., anxiety, depression, and physical symptoms).

Importantly, engagement in pursuit of extrinsic goals undermines learning and well-being even for those who actually attain their extrinsic goals (Niemiec, Ryan, & Deci, 2009; Vansteenkiste et al., 2006; Vansteenkiste, Timmermans, Lens, Soenens, & Van den Broeck, 2008). So, psychological need satisfaction and psychological well-being do not depend so much on whether people attain the goals they seek as much as they depend on what people seek to attain in the first place—intrinsic or extrinsic goal content. This conclusion stands in contrast to all other theories of student motivation that argue that the pursuit and attainment of valued goals is central to students' psychological well-being (e.g., expectancy *x* valence theory, social cognitive theory).

According to goal contents theory, the pursuit and attainment of intrinsic goals fosters deeper learning, better performance, enduring persistence, and greater psychological well-being than does the pursuit of extrinsic goals (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004a; Vansteenkiste et al., 2004b; Vansteenkiste et al., 2006) because intrinsic goals tap into and vitalize students' inner motivational resources in ways that extrinsic goals do not. The pursuit and attainment of extrinsic goals does not foster these motivational and well-being benefits and is, in fact, typically counterproductive.

Cognitive Evaluation Theory

Cognitive evaluation theory explains how and why external events such as rewards or praise affect intrinsic motivation. Intrinsically motivated behaviors are those that are initiated and maintained by the spontaneous satisfactions students experience while engaged in an activity. The two inherent satisfactions within intrinsic motivation are feeling autonomous and feeling competent, though relatedness satisfaction may also play a role in intrinsic motivation (Ryan & Deci, 2000). According to cognitive evaluation theory, any external event that affects students' perceived autonomy or perceived competence will necessarily affect their intrinsic motivation.

According to the theory, all external events (e.g., tests, rewards, grades, scholarships, deadlines, written feedback on a paper) have two functional aspects: a controlling aspect and an informational aspect (Deci & Ryan, 1980, 1985a), and it is the relative salience of the controlling versus informational aspect of the event that determines its effect on intrinsic motivation. The *controlling aspect* of an external event pressures students toward a specific outcome or toward a specific way of behaving. That is, students experience a reward as a controlling event if the reward is offered in exchange for compliant behavior (e.g., "If you come to class on time, then I will give you a special privilege."). Controlling external events diminish intrinsic motivation, whereas noncontrolling external events preserve autonomy and maintain intrinsic motivation. The *informational aspect* of an external event communicates competence feedback. That is, students experience a reward as an informational event if the reward is offered to communicate competent or improved functioning (e.g., "Because your punctuality has improved so much, you have earned a special privilege."). Informational, competence-enhancing external events increase intrinsic motivation, whereas competence-undermining external events (e.g., criticism) decrease it.

Cognitive evaluation theory is a crucial mini-theory in the overall SDT framework (and the first to emerge; Deci & Ryan, 1980) because it specifies how classroom conditions can enhance and support students' intrinsic motivational processes or undermine and thwart them. For instance, some common classroom autonomy thwarts are surveillance (Lepper & Greene, 1975), deadlines (Amabile, DeJong, & Lepper, 1976), imposed rules and limits (Koestner, Ryan, Bernieri, & Holt, 1984), imposed goals (Mossholder, 1980), directives/commands (Reeve & Jang, 2006), competition (Deci, Betley, Kahle, Abrams, & Porac, 1981), and evaluation (Ryan, 1982). Some common classroom autonomy and competence supports are choice (Katz & Assor, 2007), opportunities for self-direction (Reeve et al., 2003), explanatory rationales (Reeve, Jang, Hardre, & Omura, 2002), acknowledgement of feelings (Koestner et al., 1984), encouragement (Reeve & Jang, 2006), and positive feedback (Ryan). As will become a crucial point later in the chapter, the interpersonal climate in which the external event is administered—autonomy supportive or controlling—predicts additional important variance in intrinsic motivation, even to the point that the same external event will have different effects on intrinsic motivation when applied in an autonomy-supportive versus controlling way—for instance, autonomy-supportive versus controlling praise (Ryan), autonomy-supportive versus controlling rewards (Ryan, Mims, & Koestner, 1983), autonomy-supportive versus controlling limits on behavior (Koestner et al., 1984), and autonomy-supportive versus controlling competitions (Reeve & Deci, 1996).

Causality Orientations Theory

Causality orientations theory describes personality-level individual differences in students' orientations toward the motivational forces that cause their behavior (Deci & Ryan, 1985b). In the classroom, some students tend to adopt an orientation in which they rely on autonomous or self-determined guides—interests, personal goals, and self-endorsed values—for the initiation and regulation of their classroom activity, while other students tend to adopt an orientation in which they rely on controlling guides—environmental incentives, social prescriptions, and pressuring internal language—for the initiation and regulation of their classroom activity. To the extent that students rely on self-determined sources of motivation to guide their plans and actions, they embrace an autonomy causality orientation; to the extent that students rely on controlled sources of motivation to guide their plans and actions, they embrace a control causality orientation.

Whereas cognitive evaluation theory reflects the social psychology of self-determination theory, causality orientations theory reflects a personality approach. In examining students' motivation and engagement from a personality perspective, it is important to distinguish students' causality orientation dispositions from other types of personality dispositions such as the widely studied Big Five personality traits. Whereas the Big Five traits are stable and biologically rooted core dimensions of personality, causality orientations are surface individual differences that are relatively malleable and influenced by socialization experiences (Vansteenkiste et al., 2010). Also, causality orientations theory suggests that each student possesses both causality orientations within the personality. What makes individual differences in causality orientations is the relative degree to which the two causality orientations are endorsed, as some students dispositionally endorse a highly autonomous causality orientation as they rely heavily on intrinsic motivation, integrated regulation, and identified regulation as sources of motivation but only lightly or occasionally on external regulation and introjected regulation, while other students dispositionally endorse a highly controlled causality orientation as they rely heavily on external regulation and introjected regulation as sources of motivation but only lightly or occasionally on intrinsic motivation, integrated regulation, and identified regulation.

Individual differences in causality orientations are important because they foreshadow students' adjustment outcomes, as students with autonomy causality orientations tend to display greater self-esteem, greater self-awareness, more mature ego development, and less self-derogation, while students with control causality orientations tend to display greater daily stress, defensiveness, and public self-consciousness (Deci & Ryan, 1985b). By adding the personality perspective to complement the other four minitheories, causality orientations theory completes the overall SDT framework.

Student-Teacher Dialectical Framework Within SDT

The starting point to understand student motivation and engagement within a SDT perspective is to appreciate that students possess inner motivational resources that allow them to be fully capable of engaging themselves constructively in the learning environment. The learning environment, in turn, features conditions that tend either to support or to thwart the inner motivational resources that students bring with them as they walk into the school and into the classroom. Hence, student motivation and the learning environment affect one another, as students tap into their inherent motivational resources to change the learning environment even as they simultaneously receive and internalize new sources of motivation from the learning environment. This reciprocal relation between student and teacher lies at the center of the student-teacher dialectical framework within SDT. To the extent that students are able to express themselves, pursue their interests and values, and acquire constructive new sources of motivation, the dialectical outcome of student-teacher interactions will be synthesis, resulting in greater student autonomy, engagement, and well-being. But if

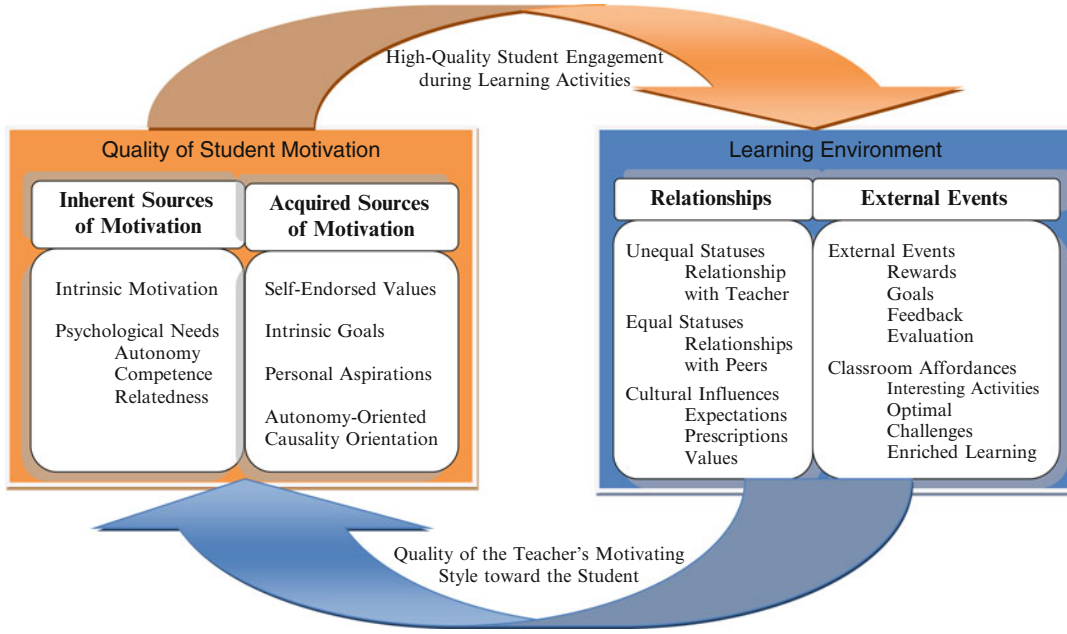

Fig. 7.3 Student-teacher dialectical framework within self-determination theory

controlling classroom events interfere with and thwart students' autonomous engagement, synthesis will be impaired, interpersonal conflict will arise, new sources of motivation will be rejected, and less optimal student outcomes will result.

The dialectical framework appears in Fig. 7.3. The box on the left hand side of the figure represents the quality of the student's motivation during instruction, as informed by SDT's basic needs theory, organismic integration theory, and causality orientations theory. According to basic needs theory, students' inherent sources of motivation include those that are universal across cultures, genders, and backgrounds, including intrinsic motivation and the three psychological needs of autonomy, competence, and relatedness. According to organismic integration theory, students' acquired sources of motivation include those that are internalized through cultural experience and self-reflections that vary from student to student, including self-endorsed values, intrinsic goals, and personal aspirations. According to causality orientations theory, students' acquired sources of motivation further include the disposition-like individual differences of general causality orientations.

As shown in the large upper arrow in the figure, high-quality student engagement arises out of the quality of the student's inherent and acquired sources of motivation and out of the twin desires to interact effectively with the environment and to grow as a person and as a learner. The twofold purpose of the large upper arrow is to communicate that student engagement, first, arises out of and expresses the underlying quality of students' inner motivational resources and, second, feeds forward to affect changes in the learning environment.

The box on the right hand side of the figure represents various aspects of the learning environment. As explained by cognitive evaluation theory, some classroom influences are specific external events, such as rewards, classroom goal structures, feedback, evaluations, and the Friday-afternoon vocabulary quiz. Because of its ubiquity, goals represent particularly important external events in the classroom, and goal contents theory explains when goals support versus interfere with students' motivation, engagement, and well-being. Other classroom influences are interpersonal relationships, including those with teachers, peers, parents, and school administrators as well as more

general affiliations with school-related groups, communities, organizations, or the nation in general. All of these relationships have implications for students' motivation, but empirical research on the student-teacher dialectical framework within SDT focuses special attention on those relationships in which people of high status or expertise attempt to motivate or socialize people of lower status or lesser expertise, as with parents relating to children (Grolnick, 2003), coaches relating to athletes (Mageau & Vallerand, 2003), and teachers relating to students (Reeve, 2009b). Other classroom influences are social and cultural forces such as the learning climate (e.g., home schooling; Cai, Reeve, & Robison, 2002) or high-stakes testing policies (Ryan & LaGuardia, 1999).

Finally, as shown in the large lower arrow in the figure, external events and interpersonal relationships that collectively comprise the learning environment provide students with opportunities, hindrances, and an overall climate in which their self-motivation develops (Ryan & LaGuardia, 1999). The most constant aspect of the learning environment is the quality of the teacher's motivating style. And the most important aspect of the teacher's motivating style toward students is whether that style is autonomy supportive or controlling, as students develop autonomous motivations when teachers are autonomy supportive, while they develop controlled motivations when teachers are controlling (Reeve, 2009b).

The student-teacher dialectical framework within SDT was first proposed in 2004, and it was built on experimental studies and cross-sectional survey investigations that largely examined how one variable within the framework affected another. For example, an extensive body of research has accumulated to understand how extrinsic rewards (Deci et al., 1999), interpersonal feedback (Ryan et al., 1983), and the teachers' motivating style (Deci, Schwartz, Sheinman, & Ryan, 1981) affect student motivation, just as an extensive body of empirical research has accumulated to understand how psychological needs (Skinner & Belmont, 1993), intrinsic goals (Vansteenkiste et al., 2004a), and causality orientations (Deci & Ryan, 1985b) affect students' engagement and learning outcomes. More recently, classroom-based, longitudinally designed research investigations have been undertaken to test the student-teacher dialectical framework as a whole.

Figure 7.4 shows the research design and theoretical predictions from one classroom-based, longitudinally designed, data-based study that was specifically undertaken to test the student-teacher dialectical framework as a whole (Jang, Kim, & Reeve, 2011). Students' perceptions of their teacher's motivating style and self-reports of their own motivation, and engagement, and their objective class-specific achievement were assessed in three waves—at the beginning, middle, and end of the semester. The three downward-slopping boldface lines in Fig. 7.4 represent separate predictions from the student-teacher dialectical framework as (1) the teacher's motivating style affects midsemester changes in students' motivation, as defined by the extent of students' psychological need satisfaction, (2) changes in students' motivation during the course affect corresponding changes in how engaged versus disengaged students are, and (3) changes in student engagement over the course of the semester predict gains versus losses in students' achievement, controlling for students' anticipated achievement at the beginning of the course.

Each of the five boldface lines from Fig. 7.4 parallels an important feature within the student-teacher dialectical framework depicted in Fig. 7.3. Specifically, the path from teacher-provided autonomy support at Time 1 to changes in students' motivation (need satisfaction) at Time 2 in Fig. 7.4 represents the lower U-shaped arrow in Fig. 7.3. The path from student motivation at Time 2 to student engagement at Time 3 in Fig. 7.4 represents the upper rainbow-shaped arrow in Fig. 7.3. In addition, Fig. 7.4 depicts three important extensions of the student-teacher dialectical framework. Each new path will be highlighted in the third section of the present chapter, but each is introduced here. The path from student engagement at Time 3 to students' end-of-course achievement in Fig. 7.4 explains the first new function of student engagement—namely, that it predicts students' positive outcomes, including achievement. The upward-slopping path from student engagement

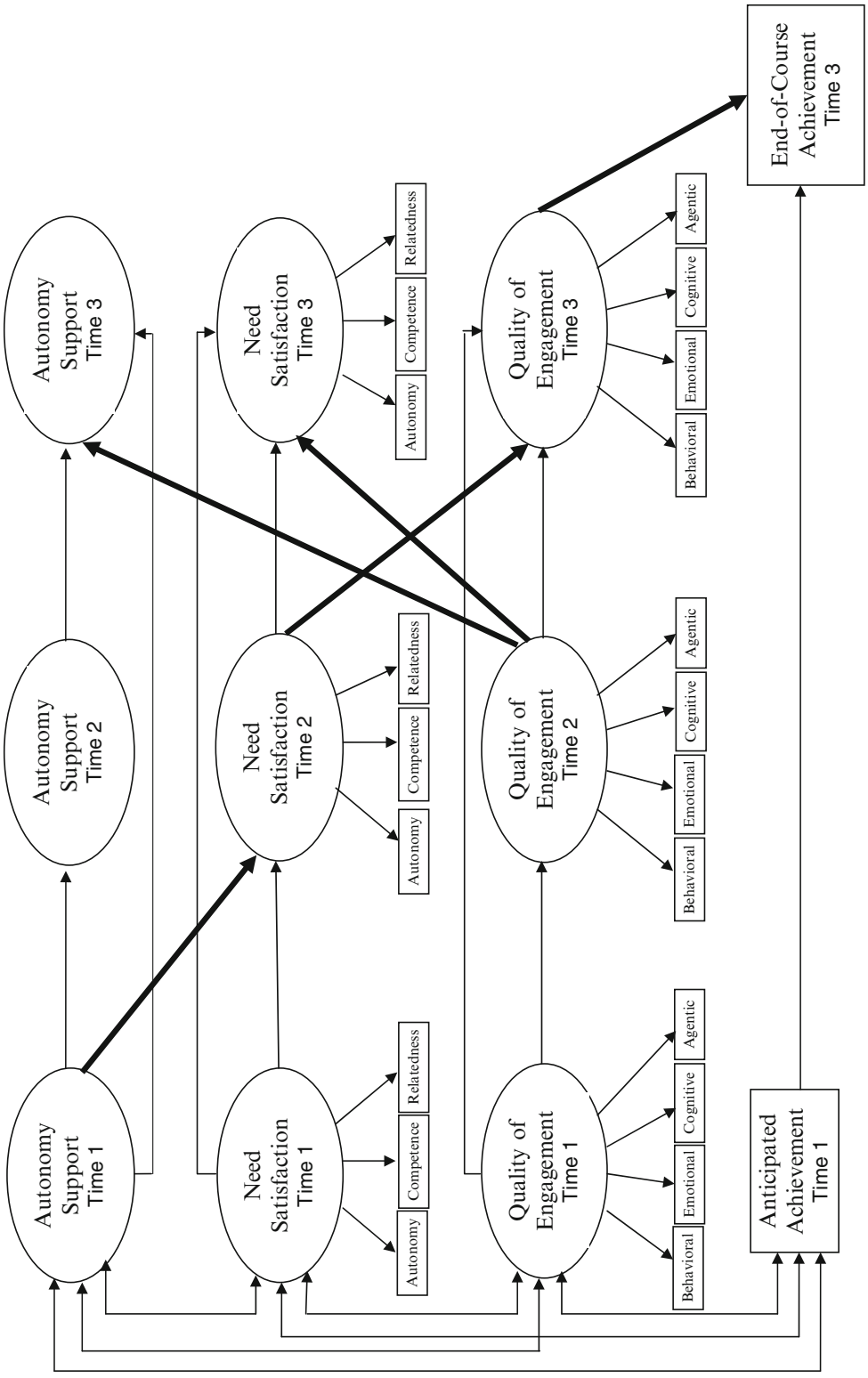

Fig. 7.4 Longitudinal research design to test predictions from the student-teacher dialectical framework

at Time 2 to teacher-provided autonomy support at Time 3 explains the second new function of student engagement—namely, that it predicts constructive changes in the learning environment. The upward-slopping path from student engagement at Time 2 to changes in students' motivation (need satisfaction) explains the third new function of student engagement—namely, that it predicts constructive changes in students' own motivation.

Student Engagement Within the SDT Dialectical Framework

Among those who study the relation between student motivation and student engagement, a general consensus has emerged to characterize engagement as a three-component construct featuring behavioral (on-task attention, effort, persistence, lack of conduct problems), emotional (presence of interest and enthusiasm, absence of anger and boredom), and cognitive (strategic learning strategies, active self-regulation) aspects (Fredricks, Blumenfeld, & Paris, 2004; Jimerson, Campos, & Grief, 2003; National Research Council [NRC], 2004). Echoing this three-component conceptualization, SDT-based research investigations routinely assess these same engagement constructs (e.g., Reeve, Jang, Carrell, Jeon, & Barch, 2004; Skinner & Belmont, 1993). For instance, Skinner and her colleagues (2009) showed how autonomous motivation leads to behavioral engagement and to emotional engagement, while Vansteenkiste and colleagues (2005) showed how autonomous motivation leads to deep rather than to superficial learning (i.e., cognitive engagement).

While each of these three aspects of engagement is certainly important to understanding student engagement, this three-component model of student engagement represents only an incomplete understanding—not an incorrect one, just an incomplete one. The reason why any conceptualization of student engagement as a three-component construct is an incomplete one can be understood through the earlier-presented student-teacher dialectical framework. That is, any focus on students' behavioral, emotional, and cognitive engagement during a learning activity unwittingly embraces a unidirectional flow of instructional activity from the teacher to the student, as the teacher says "Here is an assignment for you" and students respond with some display of behavioral, emotional, and cognitive engagement. What is missing from such a conceptualization of student engagement can be seen in the large upper arrow in Fig. 7.3. That rainbow-shaped arrow represents student engagement in general, but it specifically represents students' constructive contribution into the flow of the instruction they receive, as students try to enrich and personalize that instruction. To understand this process of how students enrich learning activities, we proposed the concept of agentic engagement, and we proposed it as a fourth aspect that was distinct from—yet also highly intercorrelated with—the original three aspects (as through exploratory and confirmatory factor analyses; Reeve & Tseng, 2011).

Agentic engagement refers to students' intentional, proactive, and constructive contribution into the flow of the instruction they receive. It is assessed with both behavioral observation (Reeve et al., 2004) and self-report (Reeve & Tseng, 2011), with questionnaire items such as "During class, I express my preferences and opinions" and "I let the teacher know what I'm interested in." Conceptually, agentic engagement is the process in which students proactively try to create, enhance, and personalize the conditions and circumstances under which they learn. For instance, upon hearing the learning objective for the day (e.g., "Today, class, we are going to learn about Mendel's experiments on heredity."), an agentically engaged student might offer input, make a suggestion, express a preference, contribute something helpful, seek clarification, request an example, ask for a say in how problems will be solved, or a 100 other constructive and personalizing acts that functionally enhance the conditions under which the student learns. Such agentic engagement arises out of students' high-quality motivation, and it potentially affects changes in the learning environment (i.e., the upper arrow in Fig. 7.3).

Why Agentic Engagement Needs to Be Added as a Fourth Aspect of Student Engagement

The present chapter is likely to be the only chapter in the handbook to mention the concept of agentic engagement. For this reason, its value to both researchers and practitioners needs to be explained, as does it status as a potential fourth aspect of engagement.

As teachers provide them with learning activities, students clearly react by displaying varying levels of involvement (engagement) in the learning activities they receive. That is, when the teacher asks students to analyze a poem, students will show varying levels of attention, put forth much or only little effort, enjoy or feel anxious about the activity, and utilize deep and conceptual learning strategies or rely on only superficial ones. The existing concepts of behavioral engagement, emotional engagement, and cognitive engagement nicely capture the extent to which students differentially react to teacher-provided learning activities. Such a linear model (teacher presents a learning activity → students more or less engage themselves → student learn in proportion to their engagement) overlooks students' agentic involvement in the learning process. In actuality, students not only react to learning activities but they proact on them—enriching them (e.g., transforming them into something more interesting or optimally challenging), modifying them (e.g., seeking to learn with a partner rather than alone), personalizing them (e.g., generating options, communicating preferences), and even creating or requesting the learning opportunity in the first place, rather than merely reacting to them as a given (Bandura, 2006). Stated differently, engaged involvement includes not only reacting to the learning task one has been given by showing more or less persistence, enjoyment, and strategic thinking, but it also means initiating a process in which the student generates options that expand his or her freedom of action and increase the chance for that student to experience both strong motivation and meaningful learning.

Three Newly Discovered Functions of Student Engagement

Student engagement is important, and this is so for many reasons. Student engagement is important because it makes learning possible, as it is difficult to imagine learning a foreign language or mastering a musical instrument without considerable engagement. Student engagement is important because it predicts how well students do in school, including the academic progress they make or fail to make (Ladd & Dinella, 2009). Student engagement is also important because it is a relatively malleable student characteristic than is unusually open to constructive influences, such as a teacher's support (Birch & Ladd, 1997). Student engagement is further important because it affords teachers the moment-to-moment feedback they need during instruction to assess how well their efforts to motivate students are working, as there is no better telltale signal about student's private motivation than their public engagement. But all of these reasons, important as they are, are fairly well known.

If you accept agency as a fourth aspect of engagement, however, three new and important functions of engagement emerge, as illustrated graphically in Fig. 7.5. Figure 7.5 mirrors the earlier-presented student-teacher dialectical framework from Fig. 7.3, though it expands on the concept and functions of student engagement within that framework. In comparing Figs. 7.3 and 7.5, notice what has changed is that the single upper rainbow-shaped arrow in Fig. 7.3 has been differentiated into three distinct upper arrows in Fig. 7.5.

The first new function, depicted in the vertical arrow arising out of the quality of student motivation and extending to the newly added "Positive Student Outcomes" box, is that student engagement directly causes positive student outcomes. Of course, many researchers argue this point, as can be seen throughout the pages in this handbook. But what is new and important about this first new function of student engagement is the rather strong assertion that engagement fully mediates

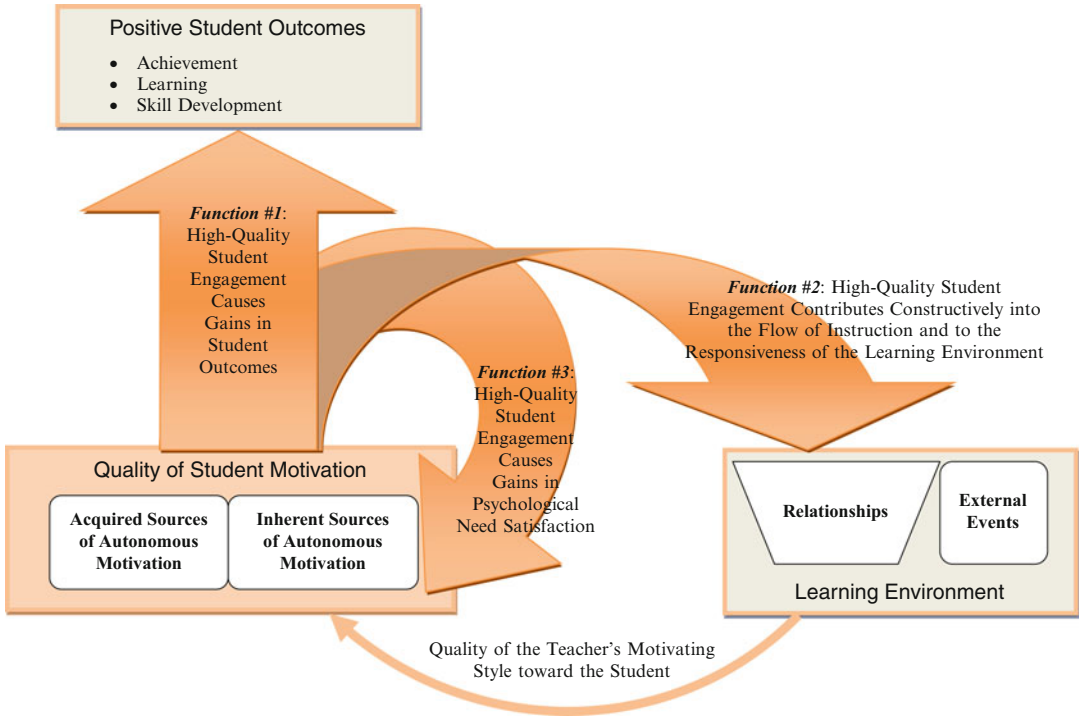

Fig. 7.5 Three new functions of student engagement within the student-teacher dialectical framework

and explains the motivation-to-outcomes relation, as will be discussed in the next section. The second new function, depicted in the rightmost, rainbow-shaped arrow extending to the learning environment, is that student engagement affects the future quality of the learning environment, especially its flow of instruction, the external events it provides, and the teacher's motivating style. The third new function, depicted in the centermost arrow that circles back into student motivation, proposes that the extent of a student's active involvement in a learning activity affects his or her subsequent motivation toward that same activity—that increases in student engagement feedback to enrich future student motivation, just as declines in student engagement feedback to impoverish it.

New Function #1: Engagement Fully Mediates the Motivation-to-Achievement Relation

Part—and probably most—of the reason that educators embrace student engagement as such an important educational construct is because it anticipates and predicts the sort of positive student outcomes identified in the upper left box in Fig. 7.5, such as academic achievement, course grades, learning, and skill development. That is, engagement bridges students' motivation to highly valued outcomes. In statistical terms, this is to say that engagement mediates the motivation-to-achievement relation. This is not, however, a controversial assertion (see Skinner & Belmont, 1993), as researchers who focus on a range of student motivations—including autonomous motivation (Black & Deci, 2000), self-efficacy (Multon, Brown, & Lent, 1991), and achievement goal orientations (Greene & Miller, 1996)—routinely show that motivation exerts a direct effect on achievement. It becomes controversial (and hence worthy of future research), however, with the assertion that engagement *fully mediates* and explains the motivation-to-achievement relation (Reeve & Tseng, 2011). That is, when student engagement is considered as a predictor of students' positive school outcomes, the direct effect that student motivation has on student achievement drops to zero.

Two features differentiate our research showing that engagement fully mediates the motivation-to-achievement relation from others' research showing a direct effect of motivation on achievement. First, we include agentic engagement within our conceptualization of student engagement, whereas others do not. When engagement is operationally defined as students' behavioral, emotional, and cognitive engagement, we often find that some residual variance in end-of-course achievement remains unexplained. Each of these three aspects of engagement does function as an important (though partial) mediator to explain end-of-course achievement, but the significant direct effect of motivation often remains—the direct effect of motivation on achievement is reduced, but it is not eliminated. This means that motivation is contributing to achievement in a way that is not fully explained by students' behavioral, emotional, and cognitive engagement. It is only when we add agentic engagement as a fourth component that engagement fully mediates and explains the motivation-to-achievement relation (Reeve & Tseng, 2011). The reason why agentic engagement explains unique variance in student achievement (or other outcomes, such as skill development or learning) is because it is through agentic acts such as making suggestions, asking questions, and personalizing lessons that students find ways to enrich and to adapt the lessons they receive into improved opportunities for learning, skill development, and achievement to occur. Hence, agentic engagement contributes achievement-enabling behaviors that the behavioral, emotional, and cognitive aspects of engagement fail to capture.

This is both a new hypothesis and a new finding, so the finding that engagement fully mediates the motivation-to-achievement relation will need to be replicated before it might advance from a tentative hypothesis to a reliable principle. However, we have now tested for this full mediation effect twice and found the effect both times (Reeve & Cheon, 2011; Reeve, Lee, Kim, & Ahn, 2011). In both studies, we operationally defined student motivation as the extent of students' psychological need satisfaction (i.e., autonomy, competence, and relatedness) during instruction. We further operationally defined student engagement in a way that was consistent with Fig. 7.1 (the four-aspect conceptualization of engagement) and student achievement as end-of-course grade. Both studies used a longitudinal research design and structural equation modeling to show that the significant direct effect that beginning-of-course motivation had on end-of-course achievement was fully explained by the mediating variable of engagement. In one of the studies (Reeve & Cheon, 2011), we expanded our conceptualization of students' positive outcomes to include not only end-of-course achievement but also skill development, a research strategy that allowed us to test for the full mediating effect of engagement on student outcomes in general rather than on student achievement in particular. This study investigated middle-school students in Korea taking classes in physical education, and student engagement fully mediated the effect that motivation had on both outcomes.

A second feature that makes our research different from previous research (besides including agentic engagement) is that we operationally defined student motivation as the extent of psychological need satisfaction during instruction. When student motivation is conceptualized in this way, several studies have now shown that student engagement fully mediates the effect that student motivation has on their positive end-of-course outcomes (Reeve & Cheon, 2011; Reeve & Tseng, 2010; Reeve et al., 2011). Recognizing this, we expanded our conceptualization of student motivation in two studies beyond the self-determination theory framework (i.e., psychological need satisfaction) to include both academic efficacy and mastery goal orientation. We did this because we wanted to assess the generalizability of our assertion that engagement fully mediates and explains the direct effect of motivation (in general) on student outcomes. Both studies that included academic efficacy (as assessed by the PALS questionnaire) showed that engagement fully mediated the effect that academic efficacy had on student achievement (Reeve & Cheon, 2010; Reeve et al., 2011) and also on student skill development (Reeve & Cheon, 2011).

One study assessed students' mastery goal orientation as a third operational definition of student motivation (Reeve et al., 2011). In this study with Korean middle- and high-school students enrolled in a wide range of courses, engagement did not fully mediate the mastery goal-to-achievement main effect. We found this result surprising, as it challenges our assertion that engagement fully mediates the effect that motivation in general has on achievement. We will return to this issue in the Future Research section at the end of the chapter.

New Function #2: Engagement Changes the Learning Environment

Adding agency as a new component of student engagement paints a fuller picture of how students really engage themselves in learning activities. Recognizing that students (sometimes) proactively, intentionally, and constructively contribute into the instruction they receive clarifies how students learn and profit from classroom learning opportunities—or even how they create new learning opportunities for themselves. What agentically engaged students are doing (that agentically disengaged students are not doing) is offering input, personalizing and enriching the lesson, and modifying and adapting it into an improved opportunity for learning.

Such agency is the ideal complement to a teacher's autonomy-supportive motivating style, just as the lack of student agency is the ideal complement to a teacher's controlling style. That is, agency involves students asking questions, expressing opinions, and communicating interests, while autonomy support involves teachers creating the classroom conditions in which students feel free to ask questions, express opinions, and pursue interests. What adding the concept of agentic engagement can do for any view of student motivation (e.g., need satisfaction, self-efficacy, personal goals, possible selves, individual interests, and mastery goal orientation) is to draw greater attention to students' intentional, proactive, and origin-like motivational involvement in learning activities.

The empirical evidence to support the second (rainbow-shaped) arrow in Fig. 7.5 has been mixed. One the one hand, laboratory research shows that experimentally manipulated levels of how engaged versus disengaged a student is in a learning activity causally affects the teacher's subsequent motivating style toward that student (Pelletier & Vallerand, 1996). That is, teachers generally react to student displays of high-quality engagement with a more autonomy-supportive motivating style, while they react to student displays of disengagement with a more controlling style (Pelletier, Seguin-Levesque, & Legault, 2002; Skinner & Belmont, 1993). Our own research, however, has not always found this engagement-to-motivating style causal effect in naturally occurring classrooms. We sometimes find that changes in student engagement during the course of the semester do not cause subsequent changes in the teachers' end-of-course motivating style (Jang et al., 2011). The biggest difference between the hypothesis-confirming experimental research and our hypothesis-questioning classroom research is likely the student-teacher ratio difference, as the ratio is 1:1 in the laboratory experiments but something like 30:1 in classroom studies. For this reason, the "relationships" variable within the Learning Environment box in Fig. 7.5 is drawn with an open-ended funnel shape. The funnel shape communicates the teacher's need to be attuned to classroom expressions of high-quality engagement, especially to expressions of agentic engagement. Teachers might become more attuned to students' engagement, for instance, by listening, by asking students as to what they would like to do, and by communicating perspective-taking comments (Reeve & Jang, 2006).

New Function #3: Engagement Changes Motivation

Another new, interesting, and important finding to emerge out of our recent longitudinal classroom-based investigations of the student-teacher dialectic is the consistent finding that changes in the quality of students' engagement during the

course of the semester predict gains versus declines in students' end-of-semester motivation (i.e., psychological need satisfaction). This effect that changes in engagement make on subsequent changes in motivation appears in Fig. 7.5 as the circular arrow in which changes in the quality of students' engagement loop back to predict subsequent changes in the quality of students' motivation. That is, students' motivation (the "Quality of Student Motivation" box in the figure) is both a cause and a consequence of student engagement. The role of this third new function of engagement is to highlight the causal role that changes in engagement contribute to changes in motivation.

The hypothesis that changes in engagement cause changes in motivation is premised on the idea that students can take action to meet their own psychological needs. According to SDT, the needs for autonomy, competence, and relatedness provide the psychological nutriments necessary for positive psychological well-being. That is, students need autonomy, competence, and relatedness experiences to be well. This assertion has received considerable empirical support. For instance, research participants reliably report having a "good day" (feeling joyful, enthusiastic) when they experience high levels of daily autonomy, competence, and relatedness, while they just as reliably report having a "bad day" (feeling distress, anger) when they experience low (or frustrated) levels of daily autonomy, competence, and relatedness (Kasser & Ryan, 1993, 1996; Sheldon et al., 1996). But to experience autonomy, competence, and relatedness, one first has to take action and actually engage in environmental transactions that are capable of producing such experiences and feelings (e.g., read a book, exercise with friends, try something new). Thus, high-quality engagement in what one is doing would seem necessary to produce need-satisfying and positive subjective experiences.

We have tested for this "changes in engagement causes changes in motivation" effect twice, and we have found the effect both times (Jang et al., 2011; Reeve et al., 2011). In both studies, student motivation was operationally defined as the extent of psychological need satisfaction, while student engagement was operationally defined in a way that was consistent with the four-component depiction in Fig. 7.1. Both studies used a full longitudinal design and structural equation modeling to test the hypothesis [i.e., the boldface upward-slopping arrow in Fig. 7.4 that extends from engagement at Time 2 to motivation (need satisfaction) at Time 3]. That path in Fig. 7.4 does not look the same as the slopping arrow from Fig. 7.5, but the effect and the interpretation are the same—changes in the quality of engagement predict (and temporally cause) changes in the quality of motivation.

Consider why this new function of engagement might be important to future engagement research. In an SDT framework, changes in students' psychological need satisfaction occur in response to the teacher's motivating style. That is, when teachers relate to students in autonomy-supportive ways, students experience greater autonomy, competence, and relatedness, and when teachers relate to students in controlling ways, they experience lesser autonomy, competence, and relatedness. Again, this is a reliable finding (Black & Deci, 2000; Deci et al., 1981; Jang, Reeve, Ryan, & Kim, 2009; Ryan & Grolnick, 1986). But the findings from the longitudinal classroom-based investigations summarized above confirm a second reliable source of changes in students' course-related motivation—namely, changes in students' course-related engagement. In fact, these studies find that changes in student engagement is a stronger predictor of end-of-course motivation than is the quality of the teacher's motivating style (in terms of the magnitude of the two respective *beta* coefficients predicting end-of-course motivation; Jang et al., 2011). This means that students can take action to meet their own psychological needs and to enhance the quality of their own motivation. This also means that students can be (and are) architects of their own motivation, at least to the extent that students can be architects of their own course-related behavioral, emotional, cognitive, and agentic engagement.

Implications for Teachers

If you are a teacher and have invested your behavioral, emotional, and cognitive engagement in reading and reflecting on the chapter to this point, it is now time to give you an opportunity to agentically voice your interests and hopes for the chapter. Accordingly, the chapter now turns to two key implications for teachers.

The first implication is to recommend that teachers work to increase their capacity to practice a more autonomy-supportive motivating style toward their students. Generally speaking, autonomy support is whatever a teacher says and does during instruction to facilitate students' perceptions of autonomy and experiences of psychological need satisfaction. More specifically, an autonomy-supportive motivating style is the interpersonal sentiment and behavior teachers provide to identify, vitalize, and develop their students' inner motivational resources during instruction (Assor, Kaplan, & Roth, 2002; Reeve, 2009b; Reeve et al., 2004). It is important because it predicts students' constructive motivation, engagement, and functioning in a reliable way, as discussed earlier. It is also important because, like student engagement, a teacher's motivating style is malleable. While it is true that teachers' naturally occurring motivating styles (controlling, neutral, or autonomy supportive) tend to remain fairly consistent throughout the school year, it is also true that teachers can learn how to be more autonomy supportive toward students. Intervention training programs have shown that teachers can learn how to be more autonomy supportive and also that such a change in one's motivating style endures well beyond the initial training experience (Su & Reeve, 2011). In these intervention studies, teachers randomly assigned into an experimental group participate in a training program that, first, tells them what autonomy support is and how beneficial it typically is for students and, second, provides them with the modeling, scaffolding, and "how-to" problem-solving discussions they need to be able to support students' autonomy during classroom practice. This research is important for the purposes of the present chapter because it shows that (1) teachers can learn how to become more autonomy supportive and (2) the more autonomy supportive they become, the more high-quality engagement their students show (e.g., Reeve et al., 2004). Stated differently, the first recommendation seeks to offer teachers a reliable path to enhancing student engagement—namely, adopt a more autonomy-supportive motivating style toward students.

The second implication is to recommend that teachers intentionally monitor and enhance students' classroom engagement. Monitoring and enhancing students' motivation and engagement is an important skill, but these are also difficult responsibilities for teachers to fulfill on a reliable basis. Monitoring students' motivation and engagement is difficult not only because classrooms are large, fluid, and diverse environments but also because motivation is a private, subjective, and unobservable student experience. That is, teachers cannot objectively see their students' underlying psychological need satisfaction, self-efficacy, interest, goal orientation, etc. The instructional task of monitoring what is unobservable and only privately experienced (i.e., student motivation) would seem overly difficult. In contrast to motivation, however, student engagement is a relatively public, objective, and observable classroom event. That is, teachers can see whether or not a student is paying attention, putting forth effort, enjoying class, solving problems in a sophisticated way, and contributing constructively into the flow of instruction. The instructional task of monitoring what is observable and publically expressed (i.e., student engagement) would seem possible.

To test this logic, we asked a group of middle- and high-school Korean teachers who taught a wide range of different subject matters to rate each student in their class on how motivated and how engaged the teacher thought the student was (Lee & Reeve, 2011). In particular, we asked these teachers to rate their students on three aspects of motivation—psychological need satisfaction, self-efficacy, and mastery goal orientation—and on four aspects of engagement—behavioral engagement, emotional engagement, cognitive

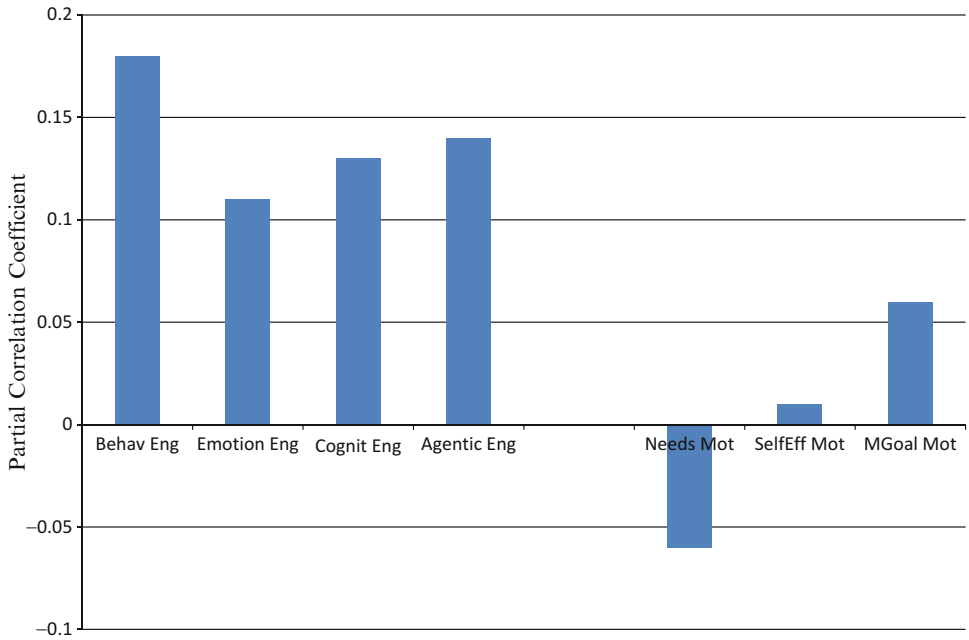

Fig. 7.6 Accuracy scores for teachers' ratings of three aspects of students' motivation and four aspects of students' engagement

engagement, and agentic engagement. At the same time, we asked the students of these teachers to self-report the same three aspects of their course-related motivation and the same four aspects of their course-related engagement, using previously validated questionnaires. How accurate teachers were in rating their students' motivation and engagement appears in Fig. 7.6.

Accuracy scores were determined with partial correlation statistics that showed the association between each teacher rating and each student self-report after partialling out variance attributable to student achievement. It was necessary to partial out student achievement scores because teachers generally rate high-achieving students as more motivated and as more engaged than they rate low-achieving students. Looking at the composite scores only, teacher rated their students' motivation unreliably ($pr = -.03$, *ns*) but their students' engagement reliably ($pr = .13$, $p < .05$), as reported in Lee and Reeve (2011). The bars in Fig. 7.6 show the partial correlations observed for each of the four aspects of engagement (on the left side of the figure) and for each of the three aspects of motivation (on the right side of the figure). Overall, results were clear: Teacher ratings of their students' motivation were inaccurate, while teachers' ratings of their students' engagement were accurate. Further, teachers' inaccuracy scores did not depend on the type of student motivation they rated, just as teacher accuracy scores did not depend on the type of student engagement they rated.

The data summarized in Fig. 7.6 are important because they suggest that the instructional effort to monitor students' motivation is probably too difficult (because it is a private, unobservable student experience), while the instructional effort to monitor students' engagement is probably manageable (because it is a public, observable student behavior). We are not suggesting that student motivation is not important, and we are not suggesting that teachers not think about how to facilitate it. After all, student motivation is the key variable underlying and causing students' classroom engagement. Instead, we recommend that teachers allocate a significant proportion of their attention during instruction to the effort of monitoring and enhancing students' engagement. Doing so allows teachers to invest their attention

on the variable that changes students' academic lives for the better—namely, high-quality student engagement.

Future Research

The present chapter relied on a pair of well-established theoretical perspectives—namely, SDT and the student-teacher dialectical framework within SDT—to present three new ideas about the nature and function of student engagement. Each one of these ideas is both new and somewhat controversial, so each requires extensive future research to assess its reliability, validity, and potential contribution to the larger literature on student engagement.

The first new finding that requires extensive future research is the definitional claim that student engagement is better conceptualized as a four-component construct than as a three-component construct. The difference between the two conceptualizations is that the four-component conceptualization includes agentic engagement, whereas the three-component conceptualization excludes it. This future research will need to examine both the conceptual status of agentic engagement as well as its assessment procedures. In terms of conceptualizing agentic engagement, Reeve and Tseng (2011) proposed five defining features of the construct: (1) it is proactive in that it occurs before or during the learning activity; (2) it is intentional in that agentic engagement is both deliberate and purposive; (3) it attempts to enrich the learning activity by making the learning experience more personal, more interesting, more challenging, or more valued; (4) it contributes constructive input into the planning or ongoing flow of the teacher's instruction; and (5) it does not connote teacher ineffectiveness or incompetence. In terms of assessing agentic engagement, researchers currently assess the construct either by having trained raters score students' agency from the Hit-Steer Observation System (for illustrations see, Jang, Reeve, & Deci, 2010; Koenig, Fielder, & deCharms, 1977; Reeve et al., 2004) or from a five-item self-report scale (Reeve & Tseng, 2011). As clarity emerges as to the nature and function of students' agentic engagement during learning activities, future research will be better positioned to improve the assessment of the construct. Part of that empirical effort will be to better assess the construct, and part of the empirical effort will be to better distinguish agentic engagement both from similar constructs (e.g., instructional help seeking) and from the other three aspects of engagement.

The second new finding that requires extensive future research is the functional claim that student engagement serves purposes beyond those that are already well established and understood. Specifically, the SDT perspective suggests three new and important functions of student engagement—namely, that student engagement fully mediates and explains the motivation-to-achievement relation, that changes in student engagement produce changes in the learning environment, and that changes in student engagement produce changes in student motivation, as students' behavioral, emotional, cognitive, and agentic engagement represents action taken to meet their psychological needs. The validity of the claim that student engagement fully mediates and explains the motivation-to-achievement relation may boil down to how the engagement construct itself is conceptualized and assessed. As emphasized above, when engagement is conceptualized and assessed as a four-component construct, student engagement does seem to consistently and fully mediate the direct effect that motivation has on students' positive outcomes. If this rather strong assertion does not eventually hold up to future analysis, there will still be important insights to gain from asking the question as to what effect motivation has on student outcomes that lies outside of its effect on engagement. It is actually rather difficult to think of a path from motivation to achievement that does not go through student engagement, though both social engagement and an improved teacher-student relationship might be two candidates. The idea that student motivation might improve the teacher-student relationship is nicely captured by the student-teacher dialectical framework within SDT, though our recent evidence suggests rather strongly that

what affects the quality of the student-teacher relationship during learning activities is more the publically observable engagement that students show and less the privately experienced motivation they harbor.

Finally, the finding that changes in student engagement produce changes in student motivation requires extensive future study. It is an exciting finding that students can take self-initiated action—in terms of their behavioral, emotional, cognitive, and agentic engagements—to meet their psychological needs. The reason this finding has such potential to improve our understanding of the functions of student engagement is partly because the effect of engagement on students' motivation seems to be as strong as the effect of the teacher's motivating style on student motivation and partly because it illustrates empirically that students can be architects of their own motivation—for better or for worse.

References

Amabile, T. M., DeJong, W., & Lepper, M. R. (1976). Effects of externally-imposed deadlines on subsequent intrinsic motivation. *Journal of Personality and Social Psychology, 34*, 92–98.

Assor, A., Kaplan, H., & Roth, G. (2002). Choice is good, but relevance is excellent: Autonomy-enhancing and suppressing teaching behaviors predicting students' engagement in schoolwork. *British Journal of Educational Psychology, 27*, 261–278.

Bandura, A. (2006). Toward a psychology of human agency. *Perspectives on Psychological Science, 1*, 164–180.

Birch, S. H., & Ladd, G. W. (1997). The student-teacher relationship and children's early school adjustment. *Journal of School Psychology, 35*, 61–79.

Black, A. E., & Deci, E. L. (2000). The effects of instructors' autonomy support and students' autonomous motivation on learning organic chemistry: A self-determination theory perspective. *Science Education, 84*, 740–756.

Cai, Y., Reeve, J., & Robinson, D. T. (2002). Home schooling and teaching style: Comparing the motivating styles of home school and public school teachers. *Journal of Educational Psychology, 94*, 372–380.

Deci, E. L. (1975). *Intrinsic motivation*. New York: Plenum.

Deci, E. L., Betley, G., Kahle, J., Abrams, L., & Porac, J. (1981). When trying to win: Competition and intrinsic motivation. *Personality and Social Psychology Bulletin, 7*, 79–83.

Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin, 125*, 627–668.

Deci, E. L., & Ryan, R. M. (1980). The empirical exploration of intrinsic motivational processes. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 13, pp. 39–40). New York: Academic Press.

Deci, E. L., & Ryan, R. M. (1985a). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.

Deci, E. L., & Ryan, R. M. (1985b). The General Causality Orientations Scale: Self-determination in personality. *Journal of Research in Personality, 19*, 109–134.

Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. In R. Dienstbier (Ed.), *Nebraska symposium on motivation: Perspectives on motivation* (Vol. 38, pp. 237–288). Lincoln: University of Nebraska Press.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227–268.

Deci, E. L., Schwartz, A., Sheinman, L., & Ryan, R. M. (1981). An instrument to assess adult's orientations toward control versus autonomy in children: Reflections on intrinsic motivation and perceived competence. *Journal of Educational Psychology, 73*, 642–650.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*, 59–109.

Greene, B. A., & Miller, R. B. (1996). Influences on achievement: Goals, perceived ability, and cognitive engagement. *Contemporary Educational Psychology, 21*, 181–192.

Grolnick, W. S. (2003). *The psychology of parental control: How well-meant parenting backfires*. Mahwah, NJ: Erlbaum.

Jang, H., Kim, E., & Reeve, J. (2011). *Longitudinal test of self-determination theory in a school context*. Manuscript submitted for publication

Jang, H., Reeve, J., & Deci, E. L. (2010). Engaging students in learning activities: It is not autonomy support or structure but autonomy support and structure. *Journal of Educational Psychology, 102*, 588–600.

Jang, H., Reeve, J., Ryan, R. M., & Kim, A. (2009). Can self-determination theory explain what underlies the productive, satisfying learning experiences of collectivistically-oriented Korean adolescents? *Journal of Educational Psychology, 101*, 644–661.

Jimerson, S. J., Campos, E., & Grief, J. L. (2003). Toward an understanding of definitions and measures of school engagement and related terms. *The California School Psychologist, 8*, 7–27.

Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology, 65*, 410–422.

Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic

and extrinsic goals. *Personality and Social Psychology Bulletin, 22*, 280–287.

Katz, I., & Assor, A. (2007). When choice motivates and when it does not. *Educational Psychology Review, 19*, 429–442.

Koenig, S. S., Fielder, M. L., & deCharms, R. (1977). Teacher beliefs, classroom interaction and personal causation. *Journal of Applied Social Psychology, 7*, 95–114.

Koestner, R., Ryan, R. M., Bernieri, F., & Holt, K. (1984). Setting limits on children's behavior: The differential effects of controlling versus informational styles on intrinsic motivation and creativity. *Journal of Personality, 52*, 233–248.

Ladd, G. W., & Dinella, L. M. (2009). Continuity and change in early school engagement: Predictive of children's achievement trajectories from first to eighth grade? *Journal of Educational Psychology, 101*, 190–206.

Lee, W., & Reeve, J. (2011). *Teacher accuracy in judging students' motivation and engagement.* Manuscript for publication.

Lepper, M. R., & Greene, D. (1975). Turning play into work: Effects of adult surveillance and extrinsic rewards on children's intrinsic motivation. *Journal of Personality and Social Psychology, 31*, 479–486.

Mageau, G. A., & Vallerand, R. J. (2003). The coach-athlete relationship: A motivational model. *Journal of Sports Science, 21*, 883–904.

Mossholder, K. W. (1980). Effects of externally mediated goal setting on intrinsic motivation: A laboratory experiment. *Journal of Applied Psychology, 65*, 202–210.

Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of Counseling Psychology, 38*, 30–38.

National Research Council. (2004). *Engaging schools: Fostering high school students' motivation to learn*. Washington, DC: The National Academies Press.

Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and Research in Education, 7*, 133–144.

Niemiec, C. P., Ryan, R. M., & Deci, E. L. (2009). The path taken: Consequences of attaining intrinsic and extrinsic aspirations in post-college life. *Journal of Research in Personality, 43*, 291–306.

Pelletier, L. G., Seguin-Levesque, C., & Legault, L. (2002). Pressure from above and pressure from below as determinants of teachers' motivation and teaching behaviors. *Journal of Educational Psychology, 94*, 186–196.

Pelletier, L. G., & Vallerand, R. J. (1996). Supervisors' beliefs and subordinates' intrinsic motivation: A behavioral confirmation analysis. *Journal of Personality and Social Psychology, 71*, 331–340.

Reeve, J. (2009a). *Understanding motivation and emotion* (5th ed.). Hoboken, NJ: Wiley.

Reeve, J. (2009b). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist, 44*, 159–175.

Reeve, J., & Cheon, S. H. (2011). *Interrelations among teachers' motivating styles and students' motivation, engagement, and skill development in a physical education context*. Manuscript submitted for publication.

Reeve, J., & Deci, E. L. (1996). Elements of the competitive situation that affect intrinsic motivation. *Personality and Social Psychology Bulletin, 22*, 24–33.

Reeve, J., Deci, E. L., & Ryan, R. M. (2004). Self-determination theory: A dialectical framework for understanding the sociocultural influences on student motivation. In D. McInerney & S. Van Etten (Eds.), *Research on sociocultural influences on motivation and learning: Big theories revisited* (Vol. 4, pp. 31–59). Greenwich, CT: Information Age.

Reeve, J., & Halusic, M. (2009). How K-12 teachers can put self-determination theory principles into practice. *Theory and Research in Education, 7*, 145–154.

Reeve, J., & Jang, H. (2006). What teachers say and do to support students' autonomy during learning activities. *Journal of Educational Psychology, 98*, 209–218.

Reeve, J., Jang, H., Carrell, D., Jeon, S., & Barch, J. (2004). Enhancing high school students' engagement by increasing their teachers' autonomy support. *Motivation and Emotion, 28*, 147–169.

Reeve, J., Jang, H., Hardre, P., & Omura, M. (2002). Providing a rationale in an autonomy-supportive way as a strategy to motivate others during an uninteresting activity. *Motivation and Emotion, 26*, 183–207.

Reeve, J., Lee, W., Kim, H., & Ahn, H. S. (2011). *Longitudinal test of the hypothesis that student engagement fully mediates the motivation-to-achievement relation*. Manuscript submitted for publication

Reeve, J., Nix, G., & Hamm, D. (2003). Testing models of the experience of self-determination in intrinsic motivation and the conundrum of choice. *Journal of Educational Psychology, 95*, 375–392.

Reeve, J., & Tseng, C. – M (2011). Agency as a fourth aspect of students' engagement during learning activities. *Contemporary Educational psychology, 36*, 257–267.

Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, J., & Ryan, R. M. (2000). Daily well-being: The role of autonomy, competence, and relatedness. *Personality and Social Psychology Bulletin, 26*, 419–435.

Ryan, R. M. (1982). Control and information in the intrapersonal sphere: An extension of cognitive evaluation theory. *Journal of Personality and Social Psychology, 43*, 450–461.

Ryan, R. M. (1993). Agency and organization: Intrinsic motivation, autonomy and the self in psychological development. In J. Jacobs (Ed.), *Nebraska symposium on motivation: Developmental perspectives on motivation* (Vol. 40, pp. 1–56). Lincoln, NE: University of Nebraska Press.

Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology, 57*, 749–761.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68–78.

Ryan, R. M., & Deci, E. L. (2002). An overview of self-determination theory: An organismic-dialectical perspective. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3–33). Rochester, NY: University of Rochester Press.

Ryan, R. M., & Grolnick, W. S. (1986). Origins and pawns in the classroom: Self-report and projective assessments of individual differences in children's perceptions. *Journal of Personality and Social Psychology, 50*, 550–558.

Ryan, R. M., & LaGuardia, J. G. (1999). Achievement motivation within a pressured society: Intrinsic and extrinsic motivation to learn and the politics of school reform. In T. Urdan (Ed.), *Advances in motivation and achievement* (Vol. 11, pp. 45–85). Greenwich, CT: JAI Press.

Ryan, R. M., Mims, V., & Koestner, R. (1983). Relation of reward contingency and interpersonal context to intrinsic motivation: A review and test using cognitive evaluation theory. *Journal of Personality and Social Psychology, 45*, 736–750.

Ryan, R. M., Sheldon, K. M., Kasser, T., & Deci, E. L. (1996). All goals are not created equal: An organismic perspective on the nature of goals and their regulation. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 7–26). New York: Guilford Press.

Sheldon, K. M., Ryan, R. M., & Reis, H. T. (1996). What makes for a good day? Competence and autonomy in the day and in the person. *Personality and Social Psychology Bulletin, 22*, 1270–1279.

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85*, 571–581.

Skinner, E. A., Kindermann, T. A., & Furrer, C. J. (2009). A motivational perspective on engagement and disaffection: Conceptualization and assessment of children's behavioral and emotional participation in academic activities in the classroom. *Educational and Psychological Measurement, 69*, 493–525.

Su, Y.-L., & Reeve, J. (2011). A meta-analysis of the effectiveness of intervention programs designed to support autonomy. *Educational Psychology Review, 23*, 159–188.

Vansteenkiste, M., Lens, W., & Deci, E. L. (2006). Intrinsic versus extrinsic goal contents in self-determination theory: Another look at the quality of academic motivation. *Educational Psychologist, 41*, 19–31.

Vansteenkiste, M., Niemiec, C. P., & Soenens, B. (2010). The development of the five mini-theories of self-determination theory: An historical overview, emerging trends, and future directions. *Advances in motivation and achievement: The decade ahead: Theoretical perspectives on motivation and achievement, 16A*, 105–167.

Vansteenkiste, M., Simons, J., Lens, W., Sheldon, K. M., & Deci, E. L. (2004a). Motivating learning, performance, and persistence: The synergistic role of intrinsic goals and autonomy support. *Journal of Personality and Social Psychology, 87*, 246–260.

Vansteenkiste, M., Simons, J., Lens, W., Soenens, B., & Matos, L. (2005). Examining the impact of extrinsic versus intrinsic goal framing and internally controlling versus autonomy-supportive communication style upon early adolescents' academic achievement. *Child Development, 76*, 483–501.

Vansteenkiste, M., Simons, J., Lens, W., Soenens, B., Matos, L., & Lacante, M. (2004b). "Less is sometimes more": Goal-content matters. *Journal of Educational Psychology, 96*, 755–764.

Vansteenkiste, M., Timmermans, T., Lens, W., Soenens, B., & Van den Broeck, A. (2008). Does extrinsic goal framing enhance extrinsic goal oriented individuals' learning and performance? An experimental test of the match-perspective vs. self-determination theory. *Journal of Educational Psychology, 100*, 387–397.

Wellborn, J. G. (1991). *Engaged and disaffected action: The conceptualization and measurement of motivation in the academic domain*. Unpublished doctoral dissertation, University of Rochester, Rochester.