

Chapter 2

Optimizing Students' Motivation in the Era of Testing and Pressure: A Self-Determination Theory Perspective

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For the past quarter century, there has been substantial discussion in many countries about the quality of educational systems. To a significant degree, these discussions have been prompted by concerns about economic competition among nations. The focus has been primarily on how well a country's students are achieving relative to the students of other countries, the idea being that the results of achievement test scores represent a good indicator of how well the countries are likely to fare in the international marketplace during future decades. However debatable that premise may be, policymakers have paid close attention to students' test scores, such as those derived from the Programme for International Student Assessments (PISA; National Center for Education Statistics, Institute of Education Sciences, 2009) and the Trends in International Mathematics and Science Study (TIMSS; National Center for Education Statistics, Institute of Education Sciences, 2011).

In some nations (e.g., Germany, Singapore), the test results are primarily used as information concerning where resources might be most needed and/or to support research and experiments in curricular impact and change. In others, however, the use and interpretation of tests has been more controlling than informational in nature. For example, in the USA, evidence of not being at the top of international rankings has been used to place external pressures on school systems from both state and federal legislation to hold the systems "accountable" for test score outcomes, especially in areas of mathematics and English. These pressures are especially heavy for schools serving high concentrations of poverty, which tend to be low performing. In turn, this *test-based accountability* pressure has spawned an

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industry of metrics and “aligned” curricula, some of which have become mandatory state-administered achievement tests, with “high stakes” attached to outcomes. Most noteworthy have been the *No Child Left Behind* legislation endorsed by President Bush and the *Race to the Top* legislation endorsed by President Obama, both of which focus on a narrow range of human motivation and learning in the service of promoting school achievement in the prescribed areas.

Such high-stakes policies represent, among other things, an explicit *motivational* strategy. By applying rewards and sanctions to districts, schools, and teachers based on a narrow set of student performances, the idea is to incentivize students, teachers, and schools to improve on these indicators. This approach to educational improvement is intended to drive higher achievement with more rewards and more fear of punishment. In fact, both the operant behavioral perspective (e.g., Skinner, 1953), which postulates that reinforcements strengthen behaviors, and the expectancy theories (e.g., Vroom, 1964; Wigfield & Eccles, 2000), which maintain that people engage in behaviors they expect will lead to desired outcomes (i.e., rewards), are frequently cited to support the logic of this control-oriented school improvement approach (e.g., see Kellaghan, Madaus, & Raczek, 1996).

Yet, as pointed out by Ryan and Brown (2005), these high-stakes testing approaches neither represent classical behaviorist strategies, nor do they fully reflect modern expectancy theories. The reason, as they highlighted, is that this controlling approach actually involves incentivizing, reinforcing, or rewarding *outcomes* rather than *behaviors*. Doing so means that any behaviors that might lead to those outcomes could be strengthened. Of course, teachers improving their teaching and students exerting more effort and being more engaged in learning are among the behaviors that could be strengthened. But so too could behaviors such as “teaching to the test,” narrowing curricula, or even cheating by the students, teachers, or administrators. Past research has shown that in controlling contexts there is a tendency for people to take a short path to desired outcomes (Shapira, 1976), and indeed there is evidence that some school systems subjected to the pressures of high-stakes testing have often taken paths that involve “gaming the system,” including straightforward cheating, at both school and district levels (e.g., Aviv, 2014; McNeil & Valenzuela, 2000; Moon, Callahan, & Tomlinson, 2003). Moreover, at least in the USA, such pressuring reforms based on incentives, sanctions, and accountability have not led to meaningful improvements in learning and achievement (e.g., Amrein & Berliner, 2002; Hout & Elliott, 2011).

An Autonomy-Supportive Approach

An alternative approach to improving schools involves supporting rather than externally controlling the motivation of teachers and students. Based on a quite different metatheory, *self-determination theory* (SDT; Deci & Ryan, 2000) begins with the assumption that people are by nature active and engaged. When in supportive or nurturing social conditions, they are naturally inclined to take in knowledge and

values and to more fully integrate the regulation of behaviors. People have, that is, an evolved tendency to grow and learn (Ryan & Hawley, [in press](#)). Indeed, this process of taking in and assimilating knowledge and behaviors is the essence of development (Piaget, 1971; Werner, 1948).

The naturalness of the human propensity to grow and learn is obvious in children prior to school. Children spend much of their time actively playing; they manipulate and experiment on their environments, and they take delight in making things happen and discovering new knowledge. Children can turn almost anything into a toy, at times finding the box that a doll or a fire truck came in as interesting as the toy itself. They marvel at all kinds of things, such as what happens when they push light switches or hit particular keys on their parents' cell phones. This is all part of exploring their world and is an extremely powerful engine of learning.

In motivational terms, such activity is said to be *intrinsically motivated* (Deci, 1975; Harlow, 1950; White, 1959). When intrinsically motivated, people engage in behaviors because they spontaneously experience interest and enjoyment when they do, and these behaviors do not require separable consequences such as tangible rewards or the avoidance of punishments. Spontaneous satisfaction and enjoyment, which are integrally intertwined with the behaviors themselves, are all the consequences that are necessary. Within *self-determination theory* (SDT; Deci & Ryan, 1985; Ryan & Deci, 2000b), intrinsic motivation is considered a natural propensity of human life, and it is a great source of energy for people's engagement with the world and their learning from it. Yet because these intrinsic assimilative propensities are expected to flourish in supportive contexts, when they are not manifest, SDT would look first and foremost to the interpersonal context to understand what may be forestalling or disrupting their expression.

Closely related to intrinsic motivation is another category of autonomous motivation, namely, *fully internalized extrinsic motivation*. Students can be autonomously motivated even when the focal activities are not interesting if they appreciate and accept the value or importance of the activities for themselves (Ryan, Connell, & Deci, 1985). As we elaborate later in the chapter, a substantial body of research has now shown that even in formal school settings—elementary, secondary, college, and professional schools—students who have higher levels of intrinsic motivation (interest) and autonomous internalized motivation (value) learn and perform better and display greater classroom adjustment and better psychological well-being than those whose levels of autonomous motivation are low (e.g., Ryan & Deci, 2000a, 2013).

It is thus extremely interesting that so much of the thinking about school reform and about the motivation of teachers and students that might facilitate greater achievement in schools gives little or no attention to fostering intrinsic motivation or supporting autonomy more generally within school settings. Stated differently, policymakers as well as some educators have focused on how to control outcomes rather than on how to create the social-contextual conditions that yield autonomous motivation and the enhanced outcomes of learning and wellness consistently associated with it (Ryan & Deci, 2015).

Intrinsic Motivation

The concept of intrinsic motivation, which was introduced into the psychological literature in the 1950s (Harlow, 1950; White, 1959), emerged primarily from research with rats and primates. Researchers repeatedly found that animals readily engaged in learning and exploratory and manipulative behaviors and moreover that those behaviors could not be satisfactorily explained by the drive or reinforcement theories of motivation that were prominent at that time (e.g., Hull, 1943). A new approach to motivation was necessary to provide a meaningful account of both exploratory behaviors in animals and normal development in humans (see White, 1959), and the concept of intrinsic motivation provided a useful starting point for such an approach.

Intrinsic motivation is considered a prototype of autonomous behaviors, which means that such behaviors are performed with a full sense of willingness, volition, and choice (e.g., Deci & Ryan, 2000; Ryan & Deci, 2000b). When intrinsically motivated, people experience an internal perceived locus of causality for their behavior (de Charms, 1968)—that is, they feel initiative and ownership in acting (Deci & Ryan, 1991). As already noted, the play of children is a characteristic example of intrinsically motivated behavior, and many leisure-time pursuits of adults also fall into that category. So too are many aspects of learning and work, especially if the tasks have been designed to be interesting. Because aspects of learning and work can be intrinsically motivated, researchers began many years ago to examine contextual factors that support and enhance intrinsic motivation as well as those that thwart and diminish it.

Classroom Climates

Early classroom studies by Deci, Schwartz, Sheinman, and Ryan (1981) were based on the hypothesis that teachers' orientations toward supporting students' autonomy versus controlling their behavior would create different climates or ambiances within their classrooms, which would in turn impact the students' intrinsic motivation and well-being. These researchers developed a self-report assessment for teachers that indexed their degree of autonomy support versus control. Just before the beginning of a school year, the researchers had teachers from fourth through sixth grades in several schools complete the scale. Two months later, there were assessments done in those classrooms of the students' intrinsic motivation, perceived competence, and self-esteem. Analyses indicated that the students of teachers who were more autonomy supportive were more intrinsically motivated, perceived themselves to be more competent at schoolwork, and had higher self-esteem than the students of teachers whose self-reported motivational strategies were more controlling. It appeared that within just 2 months, the teachers of late-elementary students had affected the students' motivation and feelings of competence as a function of the degree to which the teachers were autonomy supportive versus controlling.

Subsequent research continued to replicate and extend such findings, showing that the autonomy support versus control of both teachers and parents was related to the students' autonomous motivation, well-being, and school performance (Ryan & Grolnick, 1986). In one study, for example, Roth, Assor, Niemiec, Ryan, and Deci (2009) found that when parents of high school students were autonomy supportive, their children experienced more choice and displayed an interest-focused school engagement, whereas when the parents were controlling their children experienced inner compulsion and showed a grade-focused school engagement. In short, having teachers and parents who were autonomy supportive was associated not only with the students' autonomous motivation but also with their wellness and learning outcomes (e.g., Chirkov & Ryan, 2001; Grolnick & Ryan, 1989; Grolnick, Ryan, & Deci, 1991).

Teachers who are controlling are prone to use rewards, punishments, demands, and evaluative pressures to control behavior and to foster desired achievement outcomes, all of which have been experimentally found to undermine autonomous motivation (Deci, Koestner & Ryan, 1999; Deci, Spiegel, Ryan, Koestner, & Kauffman, 1982; Ryan & Deci, 2015). In contrast, autonomy-supportive approaches entail taking students' perspectives, acknowledging their needs and feelings, providing support when they face obstacles, and providing choice and supporting initiative where possible. In addition, positive, nonevaluative feedback that is informational rather than pressuring supports autonomy (Henderlong & Lepper, 2002). These elements of autonomy support have also been examined widely in experiments and field studies (Patall, Cooper, & Robinson, 2008; Reeve & Jang, 2006). It is interesting to note in this regard that although there has been some controversy about whether choice and autonomy are also important in eastern cultures, research has provided strong evidence that they have positive effects on Asian as well as Western children (e.g., Bao & Lam, 2008; Jang, Reeve, Ryan, & Kim, 2009). These factors likely to be used by autonomy-supportive teachers—for example, positive feedback and choice—are important because they provide people with satisfaction of what we refer to as basic psychological needs. That is, we have postulated that all people need to feel both competent and autonomous in order to be healthy, effective, and intrinsically motivated (Deci & Ryan, 2000). Thus, when teachers and parents behave in ways that allow students to satisfy those needs, there will be more positive educational outcomes.

In sum, research has suggested that autonomy-supportive classrooms tend to facilitate greater intrinsic motivation among students and that offering choice and providing positive feedback are among the factors that autonomy-supportive teachers are likely to implement in their classrooms. Such teachers would be capitalizing on the fact that students are inherently active, intrinsically motivated to engage their environments, and inclined to learn from their natural interactions. Yet, as already mentioned, recent ideas about school reform tend to ignore these inherent tendencies toward learning and to, instead, focus on controlling use of rewards, competition, evaluations, threats, and surveillance, all of which have been found to be detrimental to intrinsic motivation, autonomy, well-being, and learning.

Autonomous Extrinsic Motivation

As previously noted, central to people's nature is the process of integration, which involves the internalization and reciprocal assimilation of knowledge and experience, thus making the people more unified within their sense of self (Ryan & Deci, 2012). In terms of motivation, this process is particularly pertinent to people's motivation for activities that are not interesting but are believed by teachers and parents to be important for students to do in order for them to effectively negotiate their world. Because these behaviors are not interesting, people are not intrinsically motivated to do them, so extrinsic motivation must come into play. However, as we have seen, use of extrinsic motivators can be quite detrimental for autonomy and intrinsic motivation. Fortunately, research has shown that extrinsic motivators are less likely to be detrimental if the motivators are implemented in an autonomy-supportive social context, such as autonomy-supportive classrooms or homes. For example, Ryan, Mims, and Koestner (1983) found that when monetary rewards were given in an autonomy-supportive way, participants were much more intrinsically motivated than when they were given in a controlling way. Further, such rewards that were performance contingent and given in an autonomy-supportive context were not detrimental relative to a neutral condition with neither rewards nor feedback.

In considering the extrinsic motivation of uninteresting activities, Ryan and Deci (2000a) argued that extrinsic motivators and structures can be internalized and integrated to varying degrees, and the degree to which a motivator or structure is internalized and assimilated will affect the degree to which the ensuing behavioral regulation will be autonomous. More specifically, these researchers argued that there are four types of regulation for extrinsically motivated behaviors that vary in their degree of autonomy. The least autonomous is referred to as *external regulation*, and the regulators in such cases are the classic rewards and punishments widely given to control people's behaviors. In general, as reviewed above, when behaviors are externally regulated using contingent rewards and sanctions, they tend to be very low in autonomy—that is, these controllers of behavior foster an external perceived locus of causality and thus can have various negative consequences.

A second type of extrinsic motivation involves a partial internalization in which a regulation or contingency is taken in by a person but not accepted as his or her own. This type of internalization, referred to as *introjection*, involves internalizing an external control but maintaining its controlling nature in a form very much like it had been when the regulation was external. However, now, because the regulation is within the person, it is as if one part of the person were controlling the rest. Examples of *introjected regulation* are contingent self-esteem and ego-involvement (Deci & Ryan, 1995; Ryan, 1982). In each case, a person's sense of worth is dependent on meeting some standard, and to the degree that the person does not, the regulatory process essentially criticizes and derogates the person, so he or she ends up feeling low self-esteem. Introjected regulation, although internal to the person, is controlling and is experienced as being external to the person's sense of self—indeed, it is experienced as pressure *on* the self.

Internalization can, however, function more effectively with people coming to understand the value of uninteresting behaviors for themselves and thus being willing to accept responsibility for those behaviors. In SDT this is referred to as *identified regulation* and is indicative of people being volitional in carrying out the behaviors because they act from a sense of the behaviors' value. Thus, whereas external and introjected regulations are relatively controlling, identified regulation is relatively autonomous. Finally, when people are able to integrate identifications with other aspects of themselves, the internalization is complete. *Integrated regulation* represents the most mature form of extrinsic motivation, because with it the person wholeheartedly accepts the importance and value of the behaviors. This type of regulation is highly autonomous and shares many consequences with intrinsic motivation, which is the prototype of autonomous motivation.

The integration process, through which people internalize and assimilate values and motivation, is the means for becoming autonomous when acting in accord with norms and mores of the social world. As such, it represents optimal socialization, and it is fueled by people's needs for autonomy and relatedness. Like competence and autonomy, SDT considers relatedness to be a basic psychological need that must be satisfied for healthy effective engagement with the world. Thus, to the extent that people are able to satisfy their basic psychological needs for relatedness, competence, and autonomy by internalizing the regulation of uninteresting behaviors, the more likely they will be to do so. These psychological needs are all ones that can be supported or ignored in classroom contexts.

Basic Needs, Integration, and Autonomy

In fact, one of the most important aspects of SDT is its specification of the three basic psychological needs whose support is essential to integrative functioning and wellness. Most theories that use the concept of psychological needs (e.g., McClelland, 1965) view them as learned and study them as individual differences in need strength. However, SDT views the three basic psychological needs as evolved and universal (e.g., see Ryan & Hawley, [in press](#)), and thus the theory specifies that the needs must be satisfied in order for people to perform effectively and coherently, as well as to be psychologically well. As such, rather than focusing on individual differences in the strength of needs for making predictions about outcomes, SDT gives empirical attention to the degree to which the needs have been or are being satisfied versus frustrated, hypothesizing that greater satisfaction of the basic needs will be related to more positive outcomes. As well, the theory examines social-contextual factors that either support or thwart satisfaction of the basic needs as a basis for making predictions and prescriptions.

As already noted, research has indicated that social-contextual conditions (e.g., the provision of choice, perspective taking) that support satisfaction of the need for autonomy lead to enhanced autonomous motivation (e.g., Patall et al. 2008), whereas autonomy frustration (e.g., with controlling language) leads to undermining (e.g.,

Koestner, Ryan, Bernieri, & Holt, 1984). Contexts that support satisfaction of the competence need (e.g., with positive feedback) also facilitate autonomous motivation (e.g., Ryan et al., 1983), whereas those that thwart it (e.g., with loss of a competition) diminish the motivation (e.g., Reeve & Deci, 1996). Contexts that support relatedness (e.g., with responsiveness) enhance autonomous motivation (La Guardia, Ryan, Couchman, & Deci, 2000), whereas those that thwart it (e.g., though rejection) decrease autonomy (Legate, DeHaan, Weinstein & Ryan, 2013). Further, many studies have shown that satisfaction of all three needs promotes autonomous motivation, whereas thwarting any of the needs is detrimental to the motivation (e.g., Chen et al., [in press](#)). Accordingly, one of the important functions of the concept of basic psychological needs is that it provides accounts of social-contextual influences on intrinsic motivation and integration, and it provides a basis for making a priori predictions about the effects on motivation of factors in the social situation. If some factor seems logically like it would enhance satisfaction of people's psychological needs, it is appropriate to hypothesize positive consequences, whereas if it seems likely that a factor would thwart one or more of the needs, it would be hypothesized to have negative consequences.

Need Satisfaction, Autonomous Motivation, Learning, and Wellness

Many studies have examined the relations of both social-contextual need supports and autonomous motivation to learning and well-being outcomes, covering the range from elementary schools to universities. We provide only a few examples. Grolnick and Ryan (1987) found that, in a study of fifth-grade students who read passages appropriate to their grade level, those who were in noncontrolling learning contexts, where they experienced greater need satisfaction, displayed better conceptual learning and more positive affect than did students in the more controlling classrooms. A study of college students' learning showed comparable results (Benware & Deci, 1984).

Research in high school classes by Jang, Reeve, and Deci (2010) involved trained observers rating the behavior of both teachers and students. The researchers found that ratings of teachers' autonomy support positively predicted ratings of student engagement and further that ratings of teachers' provisions of structure accounted for additional variance in engagement. Structure concerns making clear to students how to attain desired classroom outcomes, and the research indicates that when this structure is provided by teachers in an autonomy-supportive way, the structure complements autonomy support in facilitating student engagement (Griffith & Grolnick, 2014).

In high school physical education classes, autonomy-supportive teaching was found to predict student autonomous motivation for physical activity (Hagger, Chatzisarantis, Barkoukis, Wang, & Baranowski, 2005), and the relation between

teacher autonomy support and student autonomous motivation was mediated by the students' basic psychological need satisfaction (Standage, Duda, & Ntoumanis, 2006).

Research in university-level organic chemistry classes involved students attending weekly workshops led by instructors who varied in the degree to which they were autonomy supportive versus controlling (Black & Deci, 2000). Results revealed that students who experienced their instructors as more autonomy supportive showed increases in their level of autonomous motivation during the semester and that they got better grades in the course after controlling for the variance explained by their general achievement. In other words, after controlling for indicators of ability and skill, students' autonomous motivation for this particular course predicted their performance in the course, thus paralleling results from younger students (e.g., Miserandino, 1996).

In medical schools, students who experienced their instructors as more autonomy supportive learned the course material more fully and put it into more effective use 6 months later relative to students who experienced their instructors as more controlling (Williams & Deci, 1996). Further medical students who, in their fourth year in the program, chose specialties for their residencies were likely to pick the specialty that had had the most autonomy-supportive preceptor during the students' third year in the program (Williams, Saizow, Ross, & Deci, 1997). Also, researchers found that, in law schools, having more autonomy-supportive instructors had a positive effect on students' autonomous motivation, their course grades, and the scores on their bar exams (Sheldon & Krieger, 2007).

To summarize, research in schools with elementary, secondary, university, and professional schools have all similarly found that classroom climates that support satisfaction of students' basic psychological needs for competence, autonomy, and relatedness tend to enhance the students' autonomous motivation. This results in better learning and performance, along with more positive affective experiences, than is the case with pressured climates, which lead to controlled motivation. With the large body of research showing the substantial advantages of autonomous rather than controlled motivation for the desired educational outcomes of conceptual learning, effective performance, and psychological well-being, it seems ever more clear that approaches to education reform that are based primarily on incentives, pressures, and controls for motivating effective education are misguided and lack an evidence base.

Goals and Motives

The concept of goals has been a central one in the study of motivation for half a century. Goals presumably represent the ends toward which people are motivated. Some are explicit, others less so. We briefly address two approaches to studying goals that have been used in the field of education. Our primary foci will be on whether goals are differentially effective in predicting positive educational

outcomes and how goals and motives might relate to each other in predicting those outcomes. The first approach to studying goals in education that we discuss was developed within the achievement motivation tradition and the second within the self-determination tradition. We discuss each in turn as they relate to pressuring contexts and autonomous motivation.

Achievement Goals and Autonomous Motives

The approach to studying goals that has received the greatest attention in the education literature is the achievement goal approach. The approach began by distinguishing between *mastery goals*, which involve learning in order to enhance one's own competence, and *performance goals*, which involve learning in order to appear better than others. Subsequently, the performance goals were further differentiated into *performance-approach* goals and *performance-avoidance* goals (Elliot, 1999). The former involves pursuing positive performance goal outcomes (e.g., doing better than someone else), whereas the latter involves avoiding negative performance goal outcomes (e.g., not doing worse than someone else). In this and other approach-avoidance literatures, there is ample evidence that avoidance orientations are associated with appreciable negative consequences. Indeed, performance-avoidance goals, relative to performance-approach goals, have been found to result in poorer learning, performance, and well-being outcomes. In contrast, mastery goals are generally associated with strong well-being and sometimes with high performance on achievement tasks (Elliot, 2005).

In contrast to mastery goals, performance goals are very much focused on performance in a normative way, which is quite consistent with the strong national attempt to improve achievement in order to surpass the achievement of students from other nations. To more fully understand how performance-approach goals might relate to educational outcomes, researchers have used autonomy-related concepts from SDT to examine whether the achievement goal effects that have been found in previous research might be explained in part or in full by autonomous versus controlled motives. That is, if people pursue performance-approach goals for autonomous motives, will the consequences be more positive than if pursued for controlled motives, and if the goals and motives compete for variance, will they explain independent variance?

Vansteenkiste et al. (2010) simultaneously examined the strength of performance-approach goals and the autonomous versus controlled motives for pursuing those goals to predict self-regulated learning, test anxiety, and persistence among high school students, all outcomes that have been effectively predicted by performance-approach goals (e.g., Elliot, 2005). Vansteenkiste and colleagues found first that both the autonomous and controlled motives were significant predictors of outcomes, with autonomy positively predicting the self-regulated learning strategies and persistence and controlled motives being negative predictors of such variables and a positive predictor of test anxiety. However, when the strength of the

performance-approach goals was entered into the analyses with these motives, performance-approach goals did not predict significant variance in any of the seven outcome variables. In other words, people's motives for predicting performance-approach goals were more important than the strength of the goals themselves in predicting various educational outcomes.

Benita, Roth, and Deci (2014) conducted two studies to examine the importance of people's autonomous and controlled motives when pursuing mastery goals. As already noted, mastery goals have typically been effective in predicting affective outcomes and some performance outcomes. Further, it is noteworthy that, with their focus on improving oneself rather than outperforming others, the mastery goals are less consistent with the national obsession toward achievement and therefore with the national pressure to perform. Benita and colleagues examined mastery goals in relation to autonomous versus controlled motives for pursuing those goals and also to autonomy-supportive versus controlling educational climates within which the goals were being pursued. In the first study, autonomous motives for pursuing mastery goals led to more interest and engagement than goals for which the motives were controlled. In another study, the researchers found that mastery goals that were adopted within an autonomy-supportive context led to more positive emotional experiences than the goals adopted in controlling contexts. In sum, this research on mastery goals, like the previously reviewed research on performance-approach goals, indicates that understanding the relations of achievement goals to educational outcomes is facilitated by an examination of the motives people have for pursuing the goals or the motivational contexts within which the goals were adopted (see also Vansteenkiste, Lens, Elliot, Soenens, & Mouratidise, 2014). In all of these studies of achievement goals, controlling or pressuring contexts and controlled motives for pursuing goals were found to have negative correlates.

Intrinsic and Extrinsic Goals

The second approach to studying goals in educational contexts concerns intrinsic goals versus extrinsic goals, the former being focused on learning in order to contribute to society, to be physically fit, or to grow as a person and the latter being focused more on obtaining wealth, becoming socially recognized, or having greater power or influence. In this research, either intrinsic or extrinsic goals were emphasized in learning settings as the aims of learning, and both learning and performance outcomes were examined (e.g., Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004).

This research on intrinsic and extrinsic goals in education evolved out of earlier research by Kasser and Ryan (1993, 1996), which had examined whether, if people's aspirations or life goals were intrinsic versus extrinsic, they would be psychologically healthier. In short, the researchers found that the stronger people's extrinsic goals were, relative to their intrinsic goals, the less psychologically healthy they tended to be, and this goal effect was independent of whether people's motives for pursuing the goals were autonomous or controlled (Sheldon, Ryan, Deci, & Kasser,

2004). Further, attainment of extrinsic goals predicted ill-being rather than well-being (Niemiec, Ryan, & Deci, 2009).

In the experiments done in schools, researchers manipulated people's goals with respect to specific learning opportunities. For example, when junior college students were learning about sustainability, some were told that their learning about recycling and reusing could help them save money (an extrinsic goal), while others were told that the learning would help them contribute to the community (an intrinsic goal). Results indicated that those who learned with the intrinsic goal learned more and performed better when taking a test or explaining the material to others than did those who learned with the extrinsic goal (Vansteenkiste et al., 2004). This intrinsic goal effect was especially strong if the goals were communicated in an autonomy-supportive way. In other words, both the goals and the motives predicted independent variance and the two interacted positively.

In short, studies of the intrinsic and extrinsic goals showed that learning in order to attain intrinsic goals such as community contribution tended to satisfy basic psychological needs and promote well-being, whereas pursuit and attainment of extrinsic goals such as financial accumulation tended to thwart basic psychological needs and promoted ill-being. This research also opens up the question of what goals and motives we are orienting students toward or implicitly promoting in schools, as we prepare them for confidently entering a world of varied opportunities. With the pressures associated with competition to achieve more than others, it seems that we may be fostering extrinsic and performance goals as well as controlled motives.

SDT in the Classroom: Supporting Basic Psychological Needs

Perhaps the most important message from the research reviewed thus far is that when students' motivation is autonomous, they display more positive educational outcomes than when their motivation is controlled and that the students are more autonomously motivated when the teachers create classroom climates that support the students' basic psychological needs for competence, autonomy, and relatedness.

Support for students' basic needs begins with *teachers taking the students' perspectives* when they are interacting in school (e.g., Deci, Eghrari, Patrick, & Leone, 1994; Koestner et al., 1984). It is quite easy for teachers to slip into a mode of viewing classroom activities from their own perspective, in terms of how they think things should be, as if all students were highly motivated for all courses and would be ready to do whatever the teachers think they should. However, it is likely that the situation will often not be like that in classrooms. So it becomes essential for teachers to try to understand how the students tend to see things and to relate in terms of the students' perspectives.

Many teachers have a lot of experience working with students, and they may well have accumulated a lot of information about how students see both school-related and personal matters. They may know, for example, that some students find some

courses quite boring and that some students feel a very low sense of competence for at least some of their courses, which can be very draining of the students' motivation. Knowing such things could be useful for teachers in new situations, so they could be open to the students being bored or feeling incompetent. Still, students and their circumstances vary greatly, so even highly experienced teachers will not necessarily know what is going on for a student at a given time. That makes it especially important, when teachers sense that something is wrong for a student, to take interest in what is happening for that student, appreciating both inner and outer obstacles to motivation. When the time is right, the teachers can ask the students what is happening to them, doing it in an accepting and supportive way, so the students will not become defensive. If the teachers listen carefully, they can really understand what the students might be going through and will be able to work with them more effectively.

If teachers are able to take students' perspectives, it is likely to come naturally that they will refrain from pressuring the students to do what they, the teachers, want them to do. For example, the use of controlling language, with directives and words that convey control—words such as *should*, *must*, and *have to*—has been shown to diminish intrinsic motivation and impair internalization (Deci et al., 1994; Ryan, 1982), so when teachers are mindful of this and convey a sense of invitation rather than coercion, they will be more effective in promoting autonomy, engagement, learning, and wellness. Reeve (this volume) describes that in detail.

Research has found various other things to be important in the classroom as well. For example, providing students the opportunity to make choices either independently or as a group can help them feel more autonomous and competent and thus more engaged in the activities they played a role in selecting (e.g., Patall et al., 2008). Of course, there are certain things students need to do or learn, but there is often room for the students to make choices about what, when, and how to engage in learning activities. For example, it is important for students to read, but in some settings with very low achievement levels in language arts, letting them read almost anything they choose is better than having them not read what they have been told they have to read but do not find interesting or understandable. Providing opportunities for choice is likely to enhance students' autonomous motivation and engagement. Along with making choices, having opportunities to explore and try new things without pressure is also useful for students. Of course, teachers want students to succeed, but at times letting them make mistakes as they try something for themselves can be a more important learning opportunity than pressuring them to succeed. Indeed, natural learning is often a series of trials and experiments rather than continuous success, and teachers can be more accepting of this sometimes bumpy trajectory of discovery and learning.

Providing autonomy support does not mean that teachers are “permissive” and allow students to do whatever they want. As we said when reviewing Jang et al.'s (2010) study, optimally, teachers also provide structure, including clear guidelines, goals, and limits, but this does not require a controlling attitude or approach. Structure can be provided in autonomy-supportive ways, and when that is the case, it is likely to facilitate internalization of the structures and the goals underlying

them. For example, Deci et al.'s (1994) experiment showed that providing a meaningful rationale when asking students to do something facilitated their internalization of the request (see also Jang, 2008). This also suggests that we should not be surprised when the internalization of structures, rules, or limits may be poor if the structures are arbitrary or have no rationale.

Feedback is also important in the classroom. Many studies have shown that specific and clear positive feedback about what was done well tends to enhance autonomous motivation (see Deci et al., 1999). But evaluative feedback can have a negative effect because, even when the feedback is “positive,” it can be experienced as controlling, and when it is, it can catalyze an extrinsic orientation in the learner (e.g., Ryan, 1982). Similarly, although negative feedback has been shown to undermine intrinsic motivation because it is often done in a way that conveys incompetence (Deci & Cascio, 1972), negative feedback is sometimes important and does not necessarily have negative consequences. That requires treating the interaction as a problem-solving session in which, after being clear about what is being addressed, the student is asked how he or she sees the situation—that is, what was going on with him or her. Then, the interaction continues with the “recipient of the feedback” playing an active role in considering how he or she might handle the situation more effectively next time. In sum, the functional impact of feedback will depend on whether it is experienced as effectance relevant and informational or as controlling.

Classroom facilitation does not end with autonomy and competence. Relatedness to teachers is a substantial predictor of motivation in the classroom. Relatedness is fostered when it is clear the child feels welcomed and cared for in a given context. Teachers foster relatedness from the initial smile at the door to the concern when there are failures or difficulties in academic tasks. What is compelling to us is that relatedness is also highly correlated with perceived autonomy support. That is, caring for and connecting with a student is typically associated with more support for autonomy.

Most teachers, when free to teach, try to find ways to support interest and value in learning, thus promoting autonomy. They work to build a structured classroom that guides behavior and scaffolds the learning tasks so that each can see growth. Yet teachers themselves are also under pressure in many schools around the globe, and they do not feel the freedom they need to nurture student learning and development. The less autonomy, competence, and relatedness teachers themselves experience in their jobs, the less able they are to facilitate the students' autonomy and learning.

What Teachers Need

Teachers can become more autonomous, competent, and relationally supportive through many pathways. One path of course is specific training. For example, Kaplan and Assor (2012) described an intervention program in which Israeli

teachers received training to be more autonomy supportive. Those who received the intervention subsequently had students who displayed less aggression and negative affect than did the students of teachers who were in the control group. Cheon, Reeve, and Moon (2012) designed and implemented an intervention for physical education teachers to enhance their support for autonomy. Observer and student ratings confirmed the success of the intervention, including showing enhancement of students' psychological needs in trained teachers. In fact, a meta-analysis of studies examining the effects of training for teacher autonomy support found that interventions can enhance autonomy support as assessed with student perceptions and observer ratings (Su & Reeve, 2011).

Although training can sharpen skills, we also find that many teachers are daily ongoingly trying to support the psychological needs of children. Yet varied demands of the workplace can make that mission more difficult. Teachers often feel a lack of control over either the process or content of their teaching. Many find themselves subjected to prescribed curricula, controlling standards, or top-down evaluations and supervision.

To practice their craft well, SDT suggests that, just like their students, teachers need support for autonomy. For example, Nie, Chua, Yeung, Ryan, and Chan (2014) recently studied teachers' motivation in Chinese public schools. They found that teachers who experienced more autonomy support from their supervisors also evidenced more intrinsic motivation and identified regulation in their role as teachers. They also had more job satisfaction and fewer physical symptoms. In contrast, teachers who perceived their supervisors to be controlling reported more amotivation and external motivation to teach, as well as lower job satisfaction and greater workplace stress. Fernet, Guay, Senécal, and Austin (2012) showed that, when teachers experienced increases in overload and in student disruptive behaviors, the teachers experienced less autonomous motivation for teaching and less perceived competence. Those experiences in turn lead to greater emotional exhaustion and less sense of personal accomplishment. Bartholomew, Ntoumanis, Cuevas, and Lonsdale (2014) found that more teacher job pressure predicted greater burnout and that frustration of the basic psychological needs mediated this relation.

In sum, there is considerable evidence that when teacher needs are frustrated by thwarting environmental pressures, the teachers tend to be less autonomously motivated to teach and more prone to burnout. Furthermore, as Pelletier, Séguin-Lévesque, and Legault (2002) found, both pressures from above (e.g., test pressures, controlling principals) and pressures from below (unmotivated or resistant students) can negatively affect teachers' autonomous motivation for teaching. In turn, Pelletier et al. found that the less autonomous teachers' motivations were for teaching, the less autonomy supportive they were with their students. Similarly, Roth, Assor, Kanat-Maymon, and Kaplan (2007) found that teachers who were more autonomously motivated for teaching had students who perceived them to be more autonomy supportive. In contrast, teachers who felt controlled in their classrooms were seen as more controlling by students. Finally, Holzberger, Philipp, and Kunter (2014) recently showed that even high teacher self-efficacy does not enhance instructional quality if teachers' intrinsic need satisfaction is low. This shows how

there are systemic positive effects of attending to the needs of teachers, as support for their needs allows them to provide a more facilitating and supportive motivational environment for their students.

Conclusion

In this chapter, we pointed out that many countries have become concerned about the education of their students whom they believe are not performing adequately as reflected in the countries' rankings on international achievement tests. In some instances, test information has usefully informed educational improvement efforts, whereas in others it has led to policies and practices that represent controlling approaches to school reform. We have questioned the effectiveness of these controlling approaches, particularly high-stakes testing, citing relevant evidence (e.g., Hout & Elliott, 2011).

We focused on an alternative to the pressure-and-test approach. In this view, we see schools as an important locus for nurturing students' learning and holistic personal development through supporting their basic psychological needs. Need-supportive conditions have been found consistently to be effective in promoting greater engagement, learning, and well-being among students. We discussed the importance of fostering intrinsic motivation as a prototype of autonomous learning and further explained how extrinsic motivation can become internalized and integrated so students can engage in less interesting tasks with more autonomy. We also reviewed evidence that social-contextual factors that thwart the basic psychological needs for autonomy, competence, or relatedness have negative effects on autonomous motivation, learning, and well-being, whereas those that support basic psychological needs have correspondingly positive effects.

We also discussed two approaches to the study of goals in education and found that, although research has shown that goals can predict educational outcomes, whether people's motives for pursuing the goals are autonomous versus controlled predicts significant variance in those outcomes, sometimes overshadowing the goal effects. Thus, although mastery or performance goals can differentially affect outcomes, what may be more critical is the relative autonomy of the individual's pursuit of such goals.

Given that research indicates that the more autonomous approaches have clear advantages over the controlling approaches for educational outcomes, we argued that teachers can effectively put the principles of a self-determination theory approach into practice in the classroom. Training can facilitate such practice, as can providing the professional need supports teachers require. Specifically, teachers need to have their own autonomy supported to be able to effectively and flexibly meet the needs of their students.

We believe it is right for educators and policymakers both to assess educational outcomes and to devote energy and resources toward enhancing students' learning. Yet our overall point is that, rather than fetishizing specific outcomes in math or

language, reformers, educational administrators, and policymakers should begin to care more about the quality of students' and teachers' engagement, volition, and wellness within the school setting. It is our strong belief, supported by substantial empirical evidence, that, when teachers have the resources and permission to attend to the basic psychological needs of students, the students will indeed become more actively engaged in learning and will more readily internalize a value for achieving. Ultimately this process-oriented approach will result in improved achievement outcomes. Ironically, when officials instead attempt to force or control teachers and students to attain specific metrics, it crowds out good classroom practices, does harm to student development, and in the end fails to produce the desired outcomes. In sum, we would like to see nations trying just as hard to race to the top in student need satisfaction and wellness, which would result in more productive, well-educated, and fulfilled citizens across the globe.

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