

Autonomy, competence, and relatedness in the classroom

Applying self-determination theory to educational practice

CHRISTOPHER P. NIEMIEC AND

RICHARD M. RYAN

University of Rochester, New York, USA

ABSTRACT

Self-determination theory (SDT) assumes that inherent in human nature is the propensity to be curious about one's environment and interested in learning and developing one's knowledge. All too often, however, educators introduce external controls into learning climates, which can undermine the sense of relatedness between teachers and students, and stifle the natural, volitional processes involved in high-quality learning. This article presents an overview of SDT and reviews its applications to educational practice. A large corpus of empirical evidence based on SDT suggests that both intrinsic motivation and autonomous types of extrinsic motivation are conducive to engagement and optimal learning in educational contexts. In addition, evidence suggests that teachers' support of students' basic psychological needs for autonomy, competence, and relatedness facilitates students' autonomous self-regulation for learning, academic performance, and well-being. Accordingly, SDT has strong implications for both classroom practice and educational reform policies.

KEYWORDS *autonomy, education, learning, self-determination theory*

INHERENT IN HUMAN NATURE IS THE PROACTIVE TENDENCY to engage one's physical and social surroundings and to assimilate ambient values and cultural practices. That is, people are innately curious, interested creatures who possess a natural love of learning and who desire to internalize the knowledge, customs, and values that surround them. These evolved tendencies to be curious

Theory and Research in Education

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VOL 7(2) 133-144 ISSN 1477-8785 DOI: 10.1177/1477878509104318

(Lowenstein, 1994), interested (Silvia, 2008), and to seek coherence in one's knowledge (Ryan, 1995) would seem to be resources that could be cultivated and harnessed by educators as they guide learning and development. Yet too often educators introduce external controls, close supervision and monitoring, and evaluations accompanied by rewards or punishments into learning climates to ensure that learning occurs. Essentially, such practices reflect both external pressures on teachers (Ryan and Brown, 2005) and/or the beliefs of instructors that motivation is better shaped through external contingencies of reinforcement than by facilitating students' inherent interests in learning. Under such controlling conditions, however, the feelings of joy, enthusiasm, and interest that once accompanied learning are frequently replaced by experiences of anxiety, boredom, or alienation. This creates the self-fulfilling prophecy so evident in many classrooms, whereby students no longer are interested in what is taught, and teachers must externally control students to 'make' learning occur.

Self-determination theory (SDT; Deci and Ryan, 2000; Niemiec et al., in press; Ryan and Deci, 2000b) is a macro-theory of human motivation, emotion, and development that takes interest in factors that either facilitate or forestall the assimilative and growth-oriented processes in people. As such, SDT is of much import in the domain of education, in which students' natural tendencies to learn represent perhaps the greatest resource educators can tap. Yet it is also a domain in which external controls are regularly imposed, often with the well-intended belief that such contingencies promote students' learning.

In this article, we describe several important elements of SDT. First, we examine the concept of intrinsic motivation and those factors that support or undermine it in the classroom. Second, we discuss the innate tendency of people to internalize new knowledge and practices acquired through socialization, and those factors that nurture or thwart the process of internalization. Finally, to link those two topics, we discuss students' basic psychological needs for autonomy, competence, and relatedness, which when supported are associated with academic engagement and better learning outcomes, but when frustrated are associated with academic disengagement and poorer learning outcomes.

INTRINSIC MOTIVATION AND LEARNING

Intrinsic motivation refers to behaviors done in the absence of external impetus that are inherently interesting and enjoyable (Ryan and Deci, 2000a). For example, when people are intrinsically motivated they play, explore, and engage in activities for the inherent fun, challenge, and excitement of

doing so. Such behaviors have an *internal perceived locus of causality* (deCharms, 1968), which means they are experienced as emanating from the self rather than from external sources, and are accompanied by feelings of curiosity and interest (Deci and Ryan, 1985). Thus, as an exemplar of autonomous (i.e. volitional) functioning, intrinsic motivation is central to humans' inherent tendencies to learn and to develop (Flavell, 1999).

SDT posits that intrinsic motivation is sustained by satisfaction of the basic psychological needs for autonomy and competence. The need for autonomy refers to the experience of behavior as volitional and reflectively self-endorsed. For example, students are autonomous when they willingly devote time and energy to their studies. The need for competence refers to the experience of behavior as effectively enacted. For example, students are competent when they feel able to meet the challenges of their schoolwork. Importantly, satisfaction of both autonomy and competence needs is essential to maintain intrinsic motivation, contrary to what is hypothesized by self-efficacy theory (Bandura, 1989) which denies functional significance to autonomy. Therefore, students who feel competent, but not autonomous, will not maintain intrinsic motivation for learning. To date, dozens of experimental studies have supported the SDT postulate that both autonomy and competence are necessary conditions for the maintenance of intrinsic motivation (Deci et al., 1999).

Numerous investigators have applied the SDT framework to intrinsic motivation in educational contexts. Herein, we can only review several examples. Deci et al. (1981) assessed public elementary teachers' reports of their orientations toward supporting students' autonomy versus controlling their behavior. Results demonstrated that children assigned to autonomy-supportive teachers, relative to those assigned to controlling teachers, reported increased intrinsic motivation, perceived competence, and self-esteem over time. Similar findings were obtained using students' perceptions of teachers' autonomy support and control (Ryan and Grolnick, 1986). Benware and Deci (1984) had college students learn science material either with the expectation of teaching it to another student or with the expectation of being tested on it. Results revealed that students who learned in order to teach, relative to those who learned to take a test, were more intrinsically motivated and showed better conceptual learning. In actual educational contexts in both the USA (Grolnick and Ryan, 1987) and Japan (Kage and Namiki, 1990), evaluative pressures undermined, and autonomy support facilitated, students' intrinsic motivation for classroom topics and materials, as well as their performance in school. Koestner et al. (1984) conducted an in-school experiment examining the effect of setting limits on behavior. Limit setting is important to educational contexts, as limits facilitate students' harmonious functioning

within the structures of the learning environment. However, teachers can set limits in different ways. Koestner et al. found that students who were given controlling limits evidenced significantly less intrinsic motivation, relative to those students given autonomy-supportive limits. Moreover, the paintings of those children given controlling limits were rated as significantly less creative than those of children who were given autonomy-supportive limits.

Such early findings continue to be replicated and extended in current research conducted around the globe. Tsai et al. (2008) assessed seventh grade German public school students' experiences of interest in three school subjects. Multilevel modeling results showed that students' interest was enhanced for lessons in which teachers were autonomy supportive, whereas students' interest was diminished for lessons in which teachers were controlling. Burton et al. (2006) studied Canadian students and found that intrinsic motivation was associated with psychological well-being, independent of academic performance. In British physical education classes, Standage et al. (2006) showed that perceived autonomy support was associated with higher autonomous self-regulation (including intrinsic motivation), which in turn was associated with greater effort and persistence in physical education. In a series of studies, Jang et al. (in press) showed that South Korean public school students were more intrinsically motivated when they experienced feelings of autonomy and competence.

Several important conclusions can be drawn from these and related findings on intrinsic motivation. First, both teachers' orientations and specific aspects of learning tasks that are perceived as autonomy supportive are conducive to students' intrinsic motivation, whereas controlling educational climates undermine intrinsic motivation. Second, students tend to learn better and are more creative when intrinsically motivated, particularly on tasks requiring conceptual understanding. Third, the way in which teachers introduce learning tasks impacts students' satisfaction of the basic psychological needs for autonomy and competence, thereby either allowing intrinsic motivation to flourish and deeper learning to occur, or thwarting those processes.

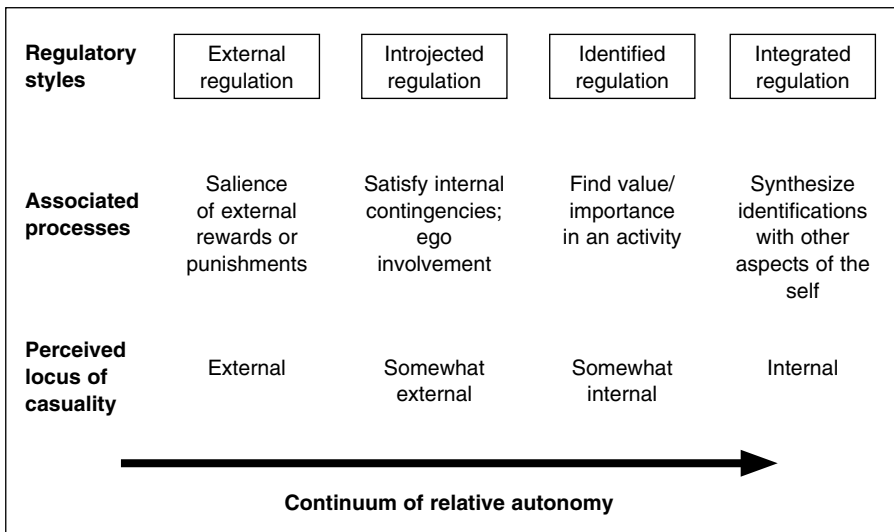
EXTRINSIC MOTIVATION, INTERNALIZATION, AND LEARNING

Intrinsic motivation provides an important basis for learning. Nonetheless, many aspects of education are not inherently satisfying or fun in an immediate sense. As examples, high-school students may not find fun or interest in arduous math problems, and college students in anatomy may not find memorizing the parts of the human body enjoyable. In such cases, intrinsic motivation is not evident and, therefore, students will need other incentives

or reasons to learn. Extrinsic motivation refers to behaviors performed to obtain some outcome separable from the activity itself (Ryan and Deci, 2000a). SDT specifies four distinct types of extrinsic motivation that vary in the degree to which they are experienced as autonomous and that are differentially associated with classroom practices (e.g. autonomy-supportive versus controlling instruction) and learning outcomes (e.g. conceptual learning versus rote memorization), as illustrated in Figure 1.

The least autonomous type of extrinsic motivation is *external regulation*, whereby behaviors are enacted to obtain a reward or to avoid a punishment. Such behaviors are poorly maintained once the controlling contingencies (e.g. grades) have been removed (Vansteenkiste et al., in press). For example, a student might study for an exam to earn a good grade or to avoid being ridiculed by classmates as incompetent, but that student would probably not seek out additional information on the topic once the exam is finished. The next type of extrinsic motivation is *introjected regulation*, whereby behaviors are enacted to satisfy internal contingencies, such as self-aggrandizement or the avoidance of self-derogation. For example, with introjected regulation, the student who originally studied to perform well on the exam now studies to feel pride or to avoid feeling guilty for not having studied enough. One particular type of introjected regulation is ego involvement (Nicholls, 1984; Ryan, 1982), which refers to one's self-esteem being contingent on one's performance. When ego is involved, a student feels internal pressure to learn

FIGURE 1 The internalization continuum depicting the various types of extrinsic motivation posited within self-determination theory



so as to avoid shame or to feel worthy (Niemiec et al., 2008). Both external regulation and introjected regulation are perceived as emanating from outside the self and thus have an *external perceived locus of causality* (deCharms, 1968). Accordingly, those forms of behavioral regulation are experienced as relatively controlling.

Proceeding toward greater autonomy, behaviors that are enacted because they are considered valuable or important are considered to exemplify *identified regulation*. For example, a student might study anatomy and physiology because mastery of such information is important for future competence in medicine. The most autonomous type of extrinsic motivation is *integrated regulation*, whereby those identified regulations have been synthesized with other aspects of the self. For example, a student might study medicine because doing so enables her to enter a profession in which she can help those in need, which is consistent with her abiding values and interests. Both identified regulation and integrated regulation are perceived as emanating from, and congruent with, the self and thus have an *internal perceived locus of causality* (deCharms, 1968). Accordingly, those forms of behavioral regulation are experienced as relatively autonomous.

Many studies have examined the psychological and academic outcomes associated with autonomous self-regulation for learning. Again, we can only review several examples. Grolnick et al. (1991) found that elementary students who reported higher autonomous self-regulation for learning were rated by their teachers as higher on both academic achievement and adjustment in the classroom. Niemiec et al. (2006) found that high-school students who reported higher autonomous self-regulation for attending college reported higher well-being (vitality, life satisfaction) and lower ill-being (depression, externalizing problems). Black and Deci (2000) found that college students who reported higher autonomous self-regulation for learning organic chemistry reported higher perceived competence and interest/enjoyment for the course material, as well as lower anxiety. Williams and Deci (1996) found that medical students who reported higher autonomous self-regulation for continuing to learn about doctor-patient relations were rated as more autonomy supportive by standardized patients. Thus, internalization of extrinsic motivation is critical for effective psychological and academic functioning among students at all educational levels.

In sum, internalization of extrinsic motivation is essential for students' self-initiation and maintained volition for educational activities that are not inherently interesting or enjoyable. Moreover, from elementary to professional schools, students learn better and report higher levels of psychological health when they have well-internalized extrinsic motivation for learning.

FACILITATING INTERNALIZATION

Given that more autonomous types of extrinsic motivation are associated with enhanced student learning and adjustment, understanding how to facilitate internalization becomes a critical educational agenda. SDT maintains that, when students' basic psychological needs for autonomy, competence, and relatedness are supported in the classroom, they are more likely to internalize their motivation to learn and to be more autonomously engaged in their studies.

Students' autonomy can be supported by teachers' minimizing the salience of evaluative pressure and any sense of coercion in the classroom, as well as by maximizing students' perceptions of having a voice and choice in those academic activities in which they are engaged. Indeed, research suggests that autonomy-supportive teaching practices are associated with positive outcomes in the classroom. For example, Chirkov and Ryan (2001) studied both Russian and US high-school students and found that students' perceptions of both teacher and parent autonomy support were associated with greater internalization of academic motivation. Another important aspect of autonomy support that has been shown to facilitate internalization is that teachers provide students with a meaningful rationale for why a learning activity is useful. In support of this, Reeve et al. (2002) reported that the provision (versus absence) of an autonomy-supportive rationale explaining the importance of a learning activity facilitated students' internalization, which in turn was associated with students' greater effort to learn.

Students' competence can be supported by educators' introducing learning activities that are optimally challenging, thereby allowing students to test and to expand their academic capabilities. Further, it is important that teachers provide students with the appropriate tools and feedback to promote success and feelings of efficacy. A central notion is that students will only engage and personally value activities they can actually understand and master. Accordingly, it is necessary that feedback downplays evaluation and emphasizes students' effectance, thus providing relevant information on how to master the tasks at hand.

In addition to the needs for autonomy and competence, SDT posits that satisfaction of the need for relatedness facilitates the process of internalization. People tend to internalize and accept as their own the values and practices of those to whom they feel, or want to feel, connected, and from contexts in which they experience a sense of belonging. In the classroom, relatedness is deeply associated with a student feeling that the teacher genuinely likes, respects, and values him or her. Students who report such relatedness are more likely to exhibit identified and integrated regulation for the arduous

tasks involved in learning, whereas those who feel disconnected or rejected by teachers are more likely to move away from internalization and thus respond only to external contingencies and controls.

Numerous studies support the SDT postulate that satisfaction of students' basic psychological needs for autonomy, competence, and relatedness is critical for their internalization of academic motivation. For example, Jang et al. (in press) assessed South Korean students and showed that satisfaction of all three basic psychological needs was associated with more satisfying learning experiences and greater academic achievement. Thus, in classroom contexts that support satisfaction of autonomy, competence, and relatedness, students tend to be more intrinsically motivated and more willing to engage in less interesting tasks, and to value academic activities. With higher volition, learners demonstrate higher-quality learning outcomes, enhanced wellness, and a greater value for what school has to offer.

SUPPORT FOR TEACHERS' AUTONOMY

Teaching practices do not occur in a vacuum. According to SDT, one major reason teachers use controlling, rather than autonomy-supportive, strategies in the classroom is that external pressures are placed on them (Ryan and Brown, 2005), and this idea has been supported in a growing number of studies. For example, Roth et al. (2007) studied Israeli teachers and found that those who felt more controlled in their own professional activities were less autonomy supportive toward their students. Similarly, Pelletier et al. (2002) examined first- to twelfth-grade Canadian teachers and observed that the more teachers perceive pressure from above (e.g. having to comply with an imposed curriculum, pressure toward performance standards), the less autonomous they are toward teaching, which in turn was associated with teachers being more controlling with students.

SDT explains this connection in two ways. First, the more that teachers' satisfaction of autonomy is undermined, the less enthusiasm and creative energy they can bring to their teaching endeavors. Second, the pressures toward specified outcomes found today in so many educational settings promotes teachers' reliance on extrinsically focused strategies that crowd out more effective, interesting, and inspiring teaching practices that would otherwise be implemented. Thus, to the extent that administrators and policy makers fail to consider the motivation of both teachers and students alike, and instead rely on controlling contingencies to produce 'accountability', the more all those involved in the learning process will suffer decrements in motivation and learning outcomes (Deci and Ryan, 2002).

CONCLUDING COMMENTS

This article provided a brief overview of SDT as applied to educational practice. We reviewed evidence suggesting that intrinsic motivation and autonomous types of extrinsic motivation relate positively to important academic outcomes. Moreover, classroom practices that support students' satisfaction of autonomy, competence, and relatedness are associated with both greater intrinsic motivation and autonomous types of extrinsic motivation. Strategies for enhancing autonomy include providing choice and meaningful rationales for learning activities, acknowledging students' feelings about those topics, and minimizing pressure and control. Strategies for enhancing competence include providing effectance-relevant, as opposed to norm-based evaluative, feedback and optimally challenging tasks. Strategies for enhancing relatedness include conveying warmth, caring, and respect to students. In the articles that follow in this special issue on SDT, the general themes concerning support for basic psychological need satisfaction discussed herein will emerge repeatedly across learning contexts, at all levels of education, and across diverse cultures. In the following articles, we shall see scholars examining the diverse implications of SDT for educational practice and policy. In our concluding article, we shall return to these themes, as well as address some of the issues facing research in SDT and its translation into practice.

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BIOGRAPHICAL NOTES

CHRISTOPHER P. NIEMIEC is currently a graduate student in Clinical and Social Sciences in Psychology at the University of Rochester. His program of research is centered on the basic principles and applications of self-determination theory. His primary research interests focus on the dynamics among, and functions of, basic psychological needs; life goals and wellness; and health-behavior change. In the fall of 2009, he will begin a position as Visiting Assistant

Professor of Psychology at the University of Rochester. Correspondence to: Christopher P. Niemic, Clinical and Social Sciences in Psychology, University of Rochester, R. C. Box 270266, Rochester, New York 14627, USA. [email: niemic@psych.rochester.edu]

RICHARD M. RYAN is a Professor of Psychology, Psychiatry, and Education at the University of Rochester. He is a Fellow of the American Psychological Association, an award-winning teacher and researcher, earning the Phi Delta Kappa award twice for research contribution in education. Ryan is also Editor-in-Chief of the psychological journal *Motivation and Emotion*. He is a widely published researcher and theorist in the areas of human motivation, development, and psychological well-being, having published over 300 articles and chapters. He is the co-developer of self-determination theory, a widely researched general theory of human motivation that has been applied to such areas as education, health care, organization, behavior, psychopathology, and sport and exercise.