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Another Look at the Quality of Academic Motivation

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Abstract

Examination of motivational dynamics in academic contexts within self-determination theory has centered primarily around both the motives (initially intrinsic vs. extrinsic, later autonomous vs. controlled) that regulate learners' study behavior and the contexts that promote or hinder these regulations. Less attention has been paid to the goal-contents (intrinsic vs. extrinsic) that learners hold and to the qualitatively different goal-contents that are communicated in schools to increase the perceived relevance of the learning. Recent field experiments are reviewed showing that intrinsic goal framing (relative to extrinsic goal framing and no-goal framing) produces deeper engagement in learning activities, better conceptual learning, and higher persistence at learning activities. These effects occur for both intrinsically and extrinsically oriented individuals. Results are discussed in terms of self-determination theory's concept of basic psychological needs for autonomy, competence, and relatedness.

Intrinsic versus Extrinsic Goal-contents in Self-Determination Theory:

Another Look at the Quality of Academic Motivation

The study of motivational processes and dynamics has received increased empirical attention within the field of educational psychology over the past decade (Murphy & Alexander, 2000; Pintrich, 2000). Several conceptual frameworks, such as self-efficacy theory (Bandura, 1997; Pajares, 1996; Zimmerman, 1989), achievement goal theory (Elliot, 1999; Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002; Midgley, Kaplan, & Middleton, 2001), expectancy-value theory (Eccles & Wigfield, 2002; Feather, 1990), and interest theory (Hidi, 2001; Krapp, 2002) have been developed to explain the variation in students' learning strategies, performance, and persistence. In the present contribution, we present a recent development within self-determination theory (SDT; Deci & Ryan, 2000; Ryan & Deci, 2000b) that has both theoretical and practical potential for educational researchers and practitioners.

Traditionally, SDT researchers have been concerned primarily with examining the *quality* of learners' motivation. A first attempt to deal with the type of motivation that guides students' learning consisted of exploring whether the learning was intrinsically motivated or extrinsically motivated (Deci, 1971, 1975). A more refined conceptualization followed in which extrinsic motivation was differentiated into types of regulation that vary in their degree of relative autonomy (Ryan & Connell, 1989; Ryan & Deci, 2000a). With this extension, the focus changed primarily to autonomous versus controlled motivation, with intrinsic motivation and well-internalized forms of extrinsic motivation being considered autonomous and poorly internalized forms of extrinsic motivation being considered controlled (Deci & Ryan, 1985).

SDT research also focused on the interpersonal environment and the effects of that environment on autonomous and controlled motivation. Specifically, social contexts (e.g., classroom climates) are characterized in terms of the degree to which they are autonomy-supportive versus controlling, with research confirming that autonomy-supportive contexts enhance autonomous motivation whereas controlling contexts diminish autonomous motivation and enhance controlled motivation (e.g., Deci, Eghrari, Patrick, & Leone, 1994; Grolnick & Ryan, 1989).

A second, more recent, and complementary approach to conceptualizing learners' quality of motivation consisted of considering the content of the goals students value. Within

SDT intrinsic goals were distinguished from extrinsic goals. This line of work, begun by Kasser and Ryan (1993, 1996), examined individual differences in the life goals that people held and related them to their well-being and adjustment. The extrinsic goals of wealth, fame, and image were compared to the intrinsic goals of growth, relationships, and community, with the relative importance of extrinsic goals relating negatively to well-being and the relative importance of intrinsic ones relating positively to well-being. Even more recently, a number of experimental field studies have explored the consequences for learning, achievement, and persistence of intrinsic versus extrinsic goals manipulated experimentally (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004; Vansteenkiste, Simons, Soenens, & Lens, 2004). Furthermore, many of the experiments that manipulated intrinsic versus extrinsic goals also examined the effects of framing those goal orientations within autonomy-supportive versus controlling social contexts. The aim of the present paper is to present these new developments within SDT and to clarify how intrinsic versus extrinsic goals are different from (although conceptually related to) autonomous versus controlled motivation (Sheldon, Ryan, Deci, & Kasser, 2004) and to address some critiques of the SDT perspective.

THE REGULATION OF BEHAVIOR

From Intrinsic versus Extrinsic Motivation to Autonomous versus Controlled Regulation

The concept of *intrinsic motivation* emerged from the work of Harlow (1953) and White (1959) in opposition to the behavioral theories that were dominant at the time. Intrinsically motivated behaviors were defined as those that are not energized by physiological drives or their derivatives and for which the reward is the satisfaction associated with the activity itself. Intrinsic motivation thus represents engagement in the activity for its own sake (Deci, 1971, 1975). At that time, intrinsic motivation was contrasted with *extrinsic motivation*, which pertains to engagement in an activity to obtain an outcome that is separable from the activity itself (deCharms, 1968; Lepper & Greene, 1978). Thus, extrinsically motivated behaviors are characterized by a means-end structure and are instrumental for some separable consequence (Eccles & Wigfield, 2002; Husman & Lens, 1999).

Within SDT, intrinsic motivation is seen as the motivational instantiation of the proactive, growth-oriented nature of human beings. Indeed, intrinsically motivated activity is the natural basis for learning and development. White (1959) suggested that a need for competence underlies intrinsic motivation, that people engage in many activities in order to experience a sense of effectance and competence. Later, deCharms (1968) proposed that people have a primary motivational propensity to engage in activities that allow them to feel a sense of personal causation, which is the basis of intrinsic motivation. Similarly, Nuttin

(1973) argued that individuals experience 'causality pleasure' when they perceive themselves as the initiator of their behavior. These authors together were thus proposing that the needs for competence and personal causation (which is closely related to the concept of autonomy) are the energizing bases for intrinsically motivated behavior.

In the 1970s several researchers examined intrinsic motivation, particularly with respect to the effects of external motivators on intrinsic motivation (Deci, 1971, 1972; Kruglanski, Freedman, & Zeevi, 1971; Lepper, Greene, & Nisbett, 1973). In the first of these early studies, Deci (1971) rewarded some participants for engaging in an intrinsically interesting activity and observed that rewarded subjects enjoyed the activity less and showed less subsequent behavioral persistence than did non-rewarded participants. This finding is particularly interesting because it is an instance in which people are approaching outcomes they value, but the process of doing so has a negative effect on the prototype of their proactive, growth-oriented nature. Deci interpreted this undermining of intrinsic motivation as indicating that the participants' behavior, which had initially been intrinsically motivated, became controlled by the reward so their sense of autonomy was undermined. Because extrinsic rewards are so often used as instruments of social control (Luyten & Lens, 1981), they can leave people feeling like pawns to the rewards (deCharms, 1968) and thus thwart their need for autonomy (Deci, Koestner, & Ryan, 1999). Additional studies showed that other external factors such as deadlines (Amabile, DeJong, & Lepper, 1976), surveillance (Enzle & Anderson, 1993), testing (Grolnick & Ryan, 1987), and controlling language (Vansteenkiste, Simons, Lens, Sheldon, et al., 2004) all undermined individuals' inherent interest and subsequent persistence at the activity.

Initial conceptualizations viewed intrinsic and extrinsic motivation as being invariantly antagonistic (e.g., de Charms, 1968; Lepper & Greene, 1978). Intrinsic motivation was considered self-determined, whereas extrinsic motivation was thought to reflect a lack of self-determination. However, later research (Koestner, Ryan, Bernieri, & Holt, 1984; Ryan, 1982; Ryan, Mims, & Koestner, 1983) indicated that extrinsic motivation does not necessarily undermine intrinsic motivation and that it may even enhance it (Luyten & Lens, 1981), implying that extrinsic motivation is not invariantly controlled. These findings resulted in a more refined analysis of extrinsic motivation. Specifically, various types of extrinsic motivation were distinguished that differ in their degree of autonomy or self-determination, depending on the extent to which people have been successful in internalizing the initially external regulation of the behavior (Deci & Ryan, 1985; Ryan & Connell, 1989; Ryan, Connell, & Deci, 1985). This process of *internalization*, we maintain, represents a second

instantiation of the growth-oriented endowment of human beings, which can be more or less successfully achieved.

The least autonomous form of extrinsic motivation is referred to as external regulation. In this case, the behavior is prompted by external contingencies, such as rewards, punishments, and deadlines, and the contingencies or reasons for performing the behavior have not been internalized at all. Because the externally regulated action is experienced as coerced and determined by external forces, it is represented by an external perceived locus of causality (deCharms, 1968). For example, a student who studies primarily because she knows her parents will reward her for doing well is externally regulated. In the case of introjected regulation, a second type of extrinsic motivation, people engage in an activity to comply with internally pressuring feelings of guilt, shame, or self-aggrandizement. With introjection, regulation of the behavior has been partially internalized, and hence is within the person, but the person has not accepted it as his or her own. Therefore, the activity does not emanate from the person's sense of self and is experienced as being pressured or coerced. Introjected regulation is also represented by an external perceived locus of causality (deCharms, 1968), and is often combined with external regulation to form a controlled motivation composite (e.g., Vallerand, Fortier, & Guay, 1997). A student who studies before going to play soccer because he would feel guilty if he did not would be displaying introjected regulation.

Identification refers to the process of identifying with the value of an activity and thus accepting regulation of the activity as one's own. When people are able to foresee the personal relevance of an activity for themselves, they are likely to identify with its importance, so they will engage in the activity quite volitionally or willingly. Identification represents a fuller form of internalization that is characterized by an internal perceived locus of causality. Although still extrinsic in nature, identified regulation shares the sense of volition with intrinsic motivation, so these two types of motivation are sometimes combined into a composite of autonomous motivation (e.g., Black & Deci, 2000; Vansteenkiste, Lens, Dewitte, De Witte, & Deci, 2004). A student who studies statistics because she has accepted the importance of statistics for her self-selected goal of doing empirical psychology will be regulating her study behavior through identification.

Internalization, which is a central process for socialization, is theorized by SDT to be energized by the human psychological needs for competence, autonomy, and relatedness (Grolnick, Deci, & Ryan, 1997). Just as with intrinsic motivation, competence and autonomy are considered important energizers of internalization, but the need for relatedness (Baumeister & Leary, 1995) is also critically important for internalization (Deci & Ryan,

2000; Ryan, 1995). Indeed, it is out of the desire to be related to others, to feel part of a family, group, or social order, that individuals are inclined to take on the values, beliefs, and behaviors that are endorsed by those others. Accordingly, for students to internalize the norms, standards, and regulations that are typically transmitted through schooling, these will need to be presented in a way that facilitates the students' feelings of relatedness, competence, and autonomy with respect to the relevant behaviors.

A number of previous studies has documented manifold advantages of autonomous relative to controlled motivation for learning, including decreased drop-out (Vallerand et al., 1997), more deep learning (Grolnick & Ryan, 1987), greater creativity (Koestner, Ryan, Bernieri, & Holt, 1984), less superficial information processing (Vansteenkiste, Simons, Lens, Sheldon et al., 2004), higher achievement (Boggiano, Flink, Shields, Seelback, & Barrett, 1993; Soenens & Vansteenkiste, 2003), and enhanced well-being (Black & Deci, 2000; Levesque, Zuehlke, Stanek, & Ryan, 2004). These general findings (see Reeve, Deci, & Ryan, 2004 for a recent review) have been replicated in collectivistic societies, such as Russia (Chirkov & Ryan, 2001) and China (Vansteenkiste, Zhou, Lens, & Soenens, 2004).

Autonomy-supportive versus Controlling Social Environments

Because learning out of inherent interest or internalized values yields many advantages, SDT researchers have explored how social contexts can promote autonomous motivation and its adaptive qualities. Many studies have focused on aspects of the social context that make it autonomy-supportive versus controlling. Autonomy-supportive instructors empathize with the learner's perspective, allow opportunities for self-initiation and choice, provide a meaningful rationale if choice is constrained, refrain from the use of pressures and contingencies to motivate behavior and provide timely positive feedback (Deci, Eghrari, Patrick, & Leone, 1994).

Such contexts stand in contrast with controlling context, which intend to pressure individuals to think, act, or feel in particular ways. Two types of controlling contexts have been differentiated, namely, externally controlling and internally controlling contexts. Externally controlling environments pertain to the use of overtly coercive strategies, such as the use of salient reward contingencies, deadlines, and overtly controlling language (e.g., the use of "have to," "should," and "ought"). Such strategies place learners under pressure to engage in the learning by inducing externally controlled regulation. However, learners can also easily place themselves under pressure to engage in a particular activity, and such internal pressures are referred to as internal controls. SDT holds that the social environment can quite easily trigger these controlling processes that reside within individuals and can

regulate their behavior. For instance, introjected regulations, which are internal controls, can be primed by guilt-inducing strategies, shaming-procedures, and the use of conditional regard (Assor, Roth, & Deci, 2004).

According to SDT, the more autonomy-supportive the social context the more it maintains or enhances intrinsic motivation and the more it facilitates the internalization and integration of extrinsic motivation because such contexts tend to satisfy rather than thwart the learners' basic psychological needs. Intrinsic and well-internalized extrinsic motivations, in turn, are expected to promote adaptive learning outcomes. For example, if students are criticized when they attempt a new behavior, they are less likely to persist in their attempts to internalize its regulation or to develop inherent interest for it, presumably because their need for competence gets forestalled. Furthermore, for students to identify with behavioral regulations and to fully assimilate them within the self, it is important for instructors to support the learners' autonomy with respect to the behaviors. When socializing agents use either overt or subtle controlling tactics, such as conditional regard (Assor, et al., 2004; Vansteenkiste, Simons, Lens, Soenens, & Matos, 2004), students tend to display impoverished and fragmented forms of internalization and fail to find interest in the activity.

Consistent with these propositions, a variety of experimental and correlational research has demonstrated that autonomy-supportive environments are associated with various benefits, including academic competence, school achievement, and higher well-being (Allen, Hauser, Bell, & O'Connor, 1994; Boggiano, Flink, Shields, Seelbach, & Barren, 1993; Grolnick, Ryan & Deci, 1991; Levesque et al., 2004; Soenens & Vansteenkiste, 2003), whereas such contexts negatively predict maladjustment, as indexed by distress in emotion-regulation and acting-out and by learning problems (Grolnick, Kurowski, Dunlap, & Hevey, 2000; Grolnick, Kurowski, McMenamy, Rivkin, & Bridges, 1998). Conversely, controlling contexts have been associated with reduced conceptual learning and lower achievement (Aunola, & Nurmi, in press; Benware & Deci, 1984; Grolnick & Ryan, 1987) and have been linked to depression and lower self-esteem (Barber, Olson, & Shagle, 1994; Soenens, Vansteenkiste, Luyten, & Goossens, in press).

To summarize, the initial dichotomous conceptualization of intrinsic and extrinsic motivation was replaced by a more differentiated view that considers the extent to which learners' study behavior is guided by autonomous regulation or controlled regulation (i.e., motives). Simultaneously, SDT researchers have detailed the social antecedents that support autonomy or control behavior, and thus that induce the two types of regulation. In addition to an examination of the motives (i.e., regulations) that underlie students' goal pursuits (i.e., the

"why" of their goals), SDT has recently begun to focus on the content of the goals people pursue (i.e., the "what" of their goals). In doing so, Kasser and Ryan (1993, 1996) made a distinction between intrinsic and extrinsic goals. This more recent conceptual development together with its implications for educational psychologists is described below.

GOALS OF BEHAVIOR

Intrinsic versus Extrinsic Personal Goals

Within SDT, *intrinsic goals*, such as community contribution, health, personal growth, and affiliation are differentiated from *extrinsic goals*, such as fame, financial success, and physical appearance. Consistent with organismic theorizing (Ryan & Deci, 2000), the former goals are labeled intrinsic because they are satisfying in their own right, they provide direct satisfaction of the basic psychological needs, and hence, they are more likely to be positively related to psychological well-being and positive adjustment. The pursuit of intrinsic goals is considered a third manifestation of the natural growth orientation (in addition to the processes of intrinsic motivation and internalization). In contrast, extrinsic goals have an '*outward*' orientation (Williams, Cox, Hedberg, & Deci, 2000) or a '*having*' orientation (Fromm, 1976; Van Boven & Gilovich, 2003) that is concerned with external manifestations of worth rather than with basic need satisfaction[1]. When people are focused on extrinsic goals, they tend to be more oriented towards interpersonal comparisons (Patrick et al., 2004; Sirgy, 1998), contingent approval (Kernis, 2003), and acquiring external signs of self-worth (Kasser, Ryan, Couchman, & Sheldon, 2004). Hence, extrinsic goal pursuits tend to be associated with poorer well-being and less optimal functioning than do intrinsic goal pursuits (Kasser & Ryan, 1996).

Consistent with these claims, several correlational studies have provided evidence that a strong focus on extrinsic, relative to intrinsic, life goals is associated with lower life-satisfaction, self-esteem, and self-actualization; higher depression and anxiety; poorer relationship quality; less cooperative behavior; and greater prejudice and social-dominant attitudes (e.g., Duriez, Vansteenkiste, Soenens, & De Witte, 2004; Kasser & Ryan, 1993, 1996; McHoskey, 1999; Sheldon & McGregor, 2000; Sheldon, Sheldon, & Osbaldiston, 2000; Vansteenkiste, Duriez, Simons, & Soenens, in press). This basic pattern has been replicated in various cultures and in various age groups (Kasser & Ryan, 1996; Ryan, Chirkov, Little, Sheldon, Timoshina, & Deci, 1999).

The concept of goal content (intrinsic vs. extrinsic) is quite different from the concept of goal motives (autonomous vs. controlled), which represent the reasons why people are pursuing the particular goal contents (Deci & Ryan, 2000). For example, students could have an after-school job to earn money (an extrinsic goal) because they feel pressured by their

parents (controlled motive) or because they are saving the money so because they value going to college and will need the money (autonomous motive). Previous research (Sheldon & Kasser, 1995) has demonstrated that, on average, the pursuit of intrinsic goals tends to be correlated with having autonomous motives (i.e., intrinsic interest or internalized importance), whereas the pursuit of extrinsic goal contents tends to be regulated by controlled motives (i.e., external or introjected forces). Nonetheless, research has made clear that goal content and goal motives do predict independent variance in well-being and adjustment (Sheldon et al., 2004). In multiple studies these authors had intrinsic (vs. extrinsic) goal importance compete for variance with autonomous (vs. controlled) motives, and consistently both concepts predicted significant independent variance in psychological well-being.

In all of the above research, the measured outcomes concerned psychological health and adjustment in relationships. Only very recently have these differential goal-contents been linked to academically relevant outcomes. For instance, Timmermans, Vansteenkiste, and Lens (2004) reported that extrinsically oriented first-year college students were more likely to display signs of academic maladjustment than their intrinsically oriented counterparts. These findings provide initial evidence for the claim that learners' goals are not all created equal in terms of the academic outcomes with which they are associated (Ryan, Sheldon, Kasser, & Deci, 1996), presumably because the goals are differentially linked to people's basic psychological need satisfaction.

Intrinsic versus Extrinsic Goal Framing

Not only has the majority of the research just reviewed on intrinsic versus extrinsic goals focused on well-being outcomes rather than educational outcomes, but it has also been done with individual differences in the strength of people's intrinsic versus extrinsic life goals. Other recent research has begun to focus on framing students' learning activities – that is, it has involved the experimental manipulation of the goals that students are pursuing while doing an educationally related activity. For example, the learning of text material or physical exercises has been framed in terms of the utility of attaining intrinsic versus extrinsic goals. The examination of these goal-content manipulations is relevant because different learning contexts do place different emphasis on intrinsic versus extrinsic goals. For example, business schools might tend to emphasize the extrinsic goal of amassing wealth, whereas education schools might be more likely to emphasize the goal of contributing to the community. Just as the valuing of intrinsic versus extrinsic goals is associated with differential outcomes, contexts that place differential emphasis on these goal-contents should result in different learning outcomes. This general hypothesis has been tested in a series of field experiments.

Each of the experiments framed students' learning in terms of whether it served a long-term intrinsic goal or a long-term extrinsic goal. Further, in each study, the goal content manipulation was crossed with a manipulation of whether the social context was autonomy-supportive or controlling. It was expected, in line with SDT, that both the goal-content manipulation and the quality of the learning-context within which the goal framing occurred would contribute independent variance to the prediction of learning, performance, and persistence.

In the first set of field experiments, Vansteenkiste, Simons, Lens, Sheldon, et al. (2004; Study 1) presented the learning of a reading activity on ecological issues in terms of either the attainment of saving money (i.e., an extrinsic goal) or in terms of contributing to the community (i.e., an intrinsic goal). The authors reasoned that extrinsic goal framing would distract learners' attention from the learning task itself, thus interfering with a full absorption with the learning material; so, they predicted poorer learning and performance in the extrinsic goal condition. In contrast, when the learning was portrayed as being useful for an intrinsic goal, there is a closer link to people's inner growth tendencies and less focus on external indicators of worth, so the learning and performance should be better. To put it differently, intrinsic versus extrinsic goal framing was expected to result in a qualitatively different engagement in the learning activity, so it was predicted to differentially affect information processing and achievement.

In this study, the intrinsic-extrinsic goal framing was crossed with whether the interpersonal context was autonomy-supportive or controlling. This manipulation was done by a few changes in the wording of the instructions—that is, in the autonomy-supportive instructions the authors used language such as "you can" and "we suggest that you," and in the controlling instructions they used language such as, "you have to" and "you should." In line with much past research (e.g., Grolnick & Ryan, 1987), it was expected that the autonomy-supportive context would lead to better learning and performance than the controlling context.

Consistent with the hypotheses, results indicated that intrinsic goal framing promoted deep level processing (both self-reported and observed), and that test performance and subsequent free-choice persistence were greater in the intrinsic-goal condition than in the extrinsic-goal condition. Furthermore, students whose goal framing had occurred in an autonomy-supportive condition also evidenced enhanced deep processing, test performance, and persistence compared to those whose goal framing has been done in a controlling fashion. These results were replicated in other studies using different intrinsic goals (community contribution, health), different extrinsic goals (physical attractiveness), different learning materials (business communications), and different age-groups (5th - 6th graders, 11th -12th graders, college students), and they were also obtained when participants learned physical exercises rather than text material (Vansteenkiste, Simons, Lens, Sheldon, et al., 2004; Vansteenkiste, Simons, Lens, Soenens, & Matos, 2004).

Subsequent studies aimed to replicate and extend this basic set of findings. In one follow-up study in the physical exercise domain, Vansteenkiste, Simons, Soenens, et al. (2004) examined whether intrinsic versus extrinsic goal framing would not only differentially affect short-term persistence, but also long-term persistence. Students in tenth to twelfth grades were told that the learning of physical exercises was either relevant to the attainment of physical attractiveness (i.e., an extrinsic goal) or to the attainment of physical health and fitness (i.e., an intrinsic goal). Following their participation in the experiment, participants were asked to demonstrate the physical exercises one week, one month, and four months after the induction. At the four-month assessment, participants also had the opportunity to sign up for a year-long course in one of the marshal arts (tai-bo). The results fully replicated the Vansteenkiste, Simons, Lens, Sheldon, et al. (2004) research, in which intrinsic goal framing resulted in superior performance and increased persistence over the short term (i.e., one week after the experiment). Further, intrinsic versus extrinsic goal framing positively predicted persistence at each of the follow-ups, and it also predicted participants' joining the year-long

marshal art course.

In another set of experimental studies, Vansteenkiste, Simons, Lens, Soenens, and Matos (2004) examined whether intrinsic versus extrinsic goal framing had a differential effect on two aspects of learning, that is, conceptual and rote learning. Vansteenkiste, Simons, Lens, Sheldon, et al. (2004) had included self-reports of deep level learning and superficial processing, but the tests tapped only conceptual learning. Extrinsic goals are expected to shift students' attention away from the learning task to the external indicators of worth and to narrow the students' focus to the instrumentality for the extrinsic outcomes. This rigid focus on the extrinsic goal was expected to result in memorization of the learning material but not conceptual understanding of it. Consistent with these hypotheses, it was found that extrinsic goal framing undermined conceptual learning across the three field studies but did not harm the children's rote learning. In fact, in two out of the five assessments of rote learning across three studies in the Vansteenkiste, Simons, Lens, Soenens, and Matos (2004) research, extrinsic goal framing (relative to intrinsic goal framing) was even found to enhance the literal and factual processing of material that is associated with rote learning. In the three other cases, no significant differences emerged between intrinsic and extrinsic goal framing on rote learning.

Further, in each of the three studies reported in the Vansteenkiste, Simons, Lens, Soenens and Matos (2004) research, goal-contents had also been crossed with type of social context. When the goals were presented to children with autonomy-supportive language, the conceptual learning was greater than when it was presented with controlling language, although the rote memorization tended not to differ as a function of the style of presentation.

The results on intrinsic versus extrinsic goal framing help to refine other researchers' conclusion (e.g., Assor et al., 2002; Cordova & Lepper, 1996; Deci, Eghrari, Patrick, & Leone, 1994) that instructors should contextualize students' learning material by highlighting its relevance. If instructors provide students with a specific rationale to help them foresee the value of the learning, they would be well advised to focus on its relevance for intrinsic goals rather than extrinsic goals.

Goal Contents and Goal Contexts

Another important issue that has been examined in relation to this goals research is whether the relations of the goal-contents to well-being and achievement outcomes are independent of the effects of the participants' autonomous versus controlled motivation for engaging in the goal-directed behaviors. This question arose in part from critiques of SDT by Carver and Baird (1998) and Srivastava, Locke, and Barthol (2001). These authors argued

that goal-content effects could be reduced to motive effects. In other words, Carver and Baird argued that people with extrinsic goals tend to be controlled in their self-regulation, and it is really the controlled regulatory style rather than the extrinsic goal contents that has the negative effects on well-being and performance. As a first response to these criticisms, Sheldon et al. (2004) demonstrated, as mentioned earlier, that, although intrinsic goal striving and autonomous regulation as well as extrinsic goal striving and controlled regulation were positively correlated, both regulatory styles and the goal contents have independent effects on well-being and adjustment.

The framing of learning activities in terms of intrinsic versus extrinsic goal contents provided a new opportunity to test these incompatible hypotheses. Specifically, because many studies (e.g., Pelletier , Fortier, Vallerand, & Brière, 2001; Vallerand, Fortier, & Guay, 1997) have confirmed that autonomy-supportive contexts tend to promote autonomous motivation and controlling contexts tend to promote controlled motivation, it is expected that autonomous motivation would mediate the effects of autonomy-supportive versus controlling contexts on the achievement outcomes. Further, if Carver and Baird (1998) were correct in their critique, the effects of intrinsic versus extrinsic goal framing on achievement outcomes would be fully mediated by autonomous motivation. In other words, the goal-content effect would be wholly reducible to the motivation (i.e., the self-regulatory style) that it was said to induce. According to SDT, however, intrinsic versus extrinsic goal framing should have an independent effect on learning after controlling for autonomous regulation, which would show up as only partial mediation.

The results of the Vansteenkiste, Simons, Lens, Sheldon, et al. (2004) research indicated that (a) intrinsic goal content and autonomy support both had an independent, positive effect on autonomous motivation, deep learning, achievement, and persistence, (b) that the effect of intrinsic versus extrinsic goal framing on the learning outcomes could, in general, be only partially accounted for by autonomous motivation.

ALTERNATIVE ACCOUNTS OF INTRINSIC VERSUS EXTRINSIC
GOAL FRAMING RESEARCH?

Our interpretation of the findings that intrinsic goal framing leads to higher quality learning than extrinsic goal framing is based on the SDT proposition that different types of motivation, and, hence, different qualities of engagement with the learning material are induced by these different goal-content manipulations. There are, however, two possible alternative explanations of the results.

The first derives from expectancy-valence theories (Atkinson & Feather, 1966; Eccles & Wigfield, 2002; Feather, 1990; Vroom, 1964) and instrumentality models (Husman & Lens, 1999; Lens, Simons, & Dewitte, 2001, 2002; Raynor, 1969). It suggests that intrinsic goal framing may have produced positive learning effects, not because it prompted qualitatively different engagement with the learning activity as was suggested by Vansteenkiste, Simons, Lens, Sheldon, et al. (2004), but because it resulted in higher overall value being placed on the learning than did extrinsic goal framing. According to this account, the beneficial effect of intrinsic goal framing would be a function of a larger quantity of motivation rather than a different quality of motivation.

The second alternative account suggests that the negative impact of extrinsic goal framing might be limited to intrinsically oriented individuals, so the main effect would have been carried by people who were high in intrinsic learning goals, as an individual difference. This represents a match perspective, in which intrinsically oriented individuals do better when exposed to an intrinsic goal environment and extrinsically oriented individuals do better when exposed to an extrinsic goal message, We consider each of these alternative approaches in turn.

The Expectancy-Valence and Instrumentality Accounts

Because intrinsic goals are, on average, more highly valued than extrinsic goals (Kasser, 2002), an expectancy-valence approach would suggest that portraying a particular activity as serving the attainment of a more highly valued intrinsic goal, relative to portraying it as serving a less highly valued extrinsic goal, should increase the perceived instrumentality of the learning. This enhanced instrumentality should, in turn, result in greater attention and energy being put into the activity. In other words, because the learning in the intrinsic goal conditions would have a higher utility or incentive value, it would prompt greater attention and concentration and should result in enhanced learning (Eccles & Wigfield, 2002; Phalet, Andriessen, & Lens, 2004; Simons, Vansteenkiste, Lens, & Lacante, 2004).

Two studies were designed to test this alternative hypothesis directly. In the first, Vansteenkiste, Simons, Lens, Soenens, Matos, and Lacante (in press) had included three goal content conditions, namely, an intrinsic goal condition, an extrinsic goal condition, and a condition in which both an intrinsic and an extrinsic goal framing rationale were presented. Thus, the effects on learning and achievement of a condition with double goal framing were compared to one condition with an intrinsic goal frame and one with an extrinsic goal frame. According to the quantitative perspective of the expectancy and instrumentality theories (Lens, 2001; Lens, Simons, & Dewitte, 2001, 2002), providing two goals, regardless of their

content, should result in more optimal learning than providing either of the goals separately. In contrast, SDT suggests that an extrinsic goal can interfere with the quality of motivation prompted by the intrinsic goal, leading to poorer learning in the condition with two goals than in the condition with just the intrinsic goal.

Results of the Vansteenkiste, Simons, Lens, Soenens, Matos, et al. (in press) study indicated that intrinsic goal framing led to better performance and persistence than did either the extrinsic goal framing condition or the double goal framing condition. Moreover, in line with SDT's suggestion that intrinsic goal framing entails a different quality of motivation, it was found that the intrinsic versus double goal framing effects on performance and persistence were fully mediated by participants' task-orientation, that is, their tendency to master and fully understand the learning material (Ames, 1992; Butler, 1987; Nicholls, 1989; Ryan, 1982). Similarly, the negative effect of extrinsic compared to double goal framing was also mediated by task-orientation; participants in the extrinsic goal condition obtained lower achievement scores because they were less oriented towards mastering the learning material.

In a second study, Vansteenkiste, Simons, Soenens, et al. (2004) compared the impact of intrinsic goal framing and extrinsic goal framing with a no-goal control group. According to expectancy and instrumentality theories, the extrinsic goal framing condition does provide additional valence or incentive for the learning task and should thus lead to better learning and performance than the no-goal condition, even if it leads to poorer learning than the intrinsic-goal condition (Vansteenkiste, Simons, Lens, Sheldon, et al., 2004). SDT, on the other hand, would predict that extrinsic goal framing might well lead to poorer learning than no goal framing because extrinsic goal framing shifts learners' attention away from the learning to the external indicators of worth, thereby hindering a full involvement in the learning. These hypotheses were tested in the exercise domain in the earlier mentioned study by Vansteenkiste, Simons, Soenens, et al. (2004). Participants were told that learning physical exercises was useful for attaining an extrinsic goal (i.e., physical attractiveness) or an intrinsic goal (i.e., physical health), or they were not told anything about the relevance of the learning activity. Results showed that intrinsic goal framing, relative to no goal framing, led to higher autonomous motivation and better test performance and also resulted in greater persistence both in the short term and the long term. In contrast, extrinsic goal framing, relative to no goal framing, undermined participants' autonomous motivation, performance, and long-term persistence. However, extrinsic goal framing resulted in better short-term persistence compared to not indicating the relevance of the exercises at all. The latter result fits nicely with the earlier mentioned finding that extrinsic goal framing prompted rote learning

(Vansteenkiste, Simons, Lens, Soenens, & Matos, 2004), presumably because extrinsic goals are, to a certain extent, powerful motivators. However, because participants in the extrinsic goal condition adopt a more rigid and narrow-focused approach to the learning material, the learning is less likely to be experienced as inherently enjoyable and meaningful to them. Hence, the persistence under extrinsic goal circumstances is likely to be of a considerably different quality compared to persistence under intrinsic goal circumstances or in the control-group. To examine this interpretation of the results additional, within-cell analyses were performed. Within-cell correlations between participants' self-reported autonomous motivation for doing the exercises and their behavioral persistence at each time point were calculated (see also Ryan, Koestner, & Deci, 1991, and Vansteenkiste & Deci, 2003 for additional examples of this approach). Vansteenkiste, Simons, Soenens, et al. (2004) found that, in the intrinsic-goal condition, participants' persistence was positively correlated with autonomous motivation at all three assessment points, whereas in the extrinsic-goal condition participants' persistence was uncorrelated with autonomous motivation at all three points. In short, students' persistence in the intrinsic condition was based in their valuing and enjoyment of the learning material, but in the extrinsic goal condition participants persisted for other reasons, presumably associated with attainment of the extrinsic outcomes.

To summarize, the results of the two studies support the SDT interpretation rather than the expectancy-value and instrumentality interpretations of the intrinsic versus extrinsic goal framing effects, because (1) the double goal framing condition did not yield greater learning and persistence than did the intrinsic goal condition, and (2) the extrinsic goal condition resulted in immediate achievement deficits, and forestalled long-term persistence compared to the no-goal condition. Hence, it seems that intrinsic versus extrinsic goal framing induces a different quality of engagement and motivation with respect to the learning rather than only enhancing the quantity of motivation for the learning. On a practical level, these results suggest that instructors may hurt students' adaptive learning and continued interest and persistence at learning when they refer to its extrinsic goal instrumentalities. Instead, it is clearly better to focus on intrinsic goals that could results from the learning, and it even appears to be better not to do any goal framing than to do extrinsic goal framing.

The Match Hypothesis

According to SDT, the framing of learning activities in terms of the attainment of intrinsic goals should be advantageous for the learning and well-being of all students because these goal-contents are more consistent with students' basic psychological needs. In contrast, the match perspective (e.g., Hidi & Harackiewicz, 2001; Sagiv & Schwartz, 2000) suggests

that intrinsic goal framing will promote learning and performance among intrinsic-goal oriented individuals, whereas extrinsic goal framing will yield learning benefits for individuals who adopt an extrinsic-goal orientation. Hence, the impact of goal framing does not depend so much on the goal itself as on the fit between the presented goal and the learners' goal orientation. As such, the match approach might suggest that the overall enhancement of learning and persistence in the intrinsic goal conditions of the studies reviewed earlier might have been carried primarily by those learners whose goal orientation was intrinsic.

A few studies have been conducted that shed preliminary light on this issue. They explored whether portraying a learning activity as serving extrinsic goal attainment would have detrimental effects on learning for people whose goal orientation is primarily extrinsic. Vansteenkiste, Simons, Lens, Sheldon, et al. (2004; Study 2) examined this in one experiment among business students. These students, whose goal orientation has been found to be more extrinsic than intrinsic (Duriez et al., 2004; Kasser & Ahuvia, 2002; Vansteenkiste, Duriez, et al., in press), were told that a learning activity about communication principles would be useful to them either to achieve the extrinsic goal of financial success in their work or to attain the intrinsic goal of personal development in their work. Based on the match-hypothesis, it would be expected that the negative effects on achievement of extrinsic goal framing found for education students (Vansteenkiste, Simons, Lens, Sheldon, et al., 2004; Study 1) would not be found for the business students because they place high value on the extrinsic goal of financial success (Vansteenkiste, Duriez, et al., in press). However, the findings showed clearly that extrinsic goal framing was indeed undermining of learning and persistence relative to intrinsic goal framing for these business students just as it had been for education students.

A second indirect test of these issues was examined in two experiments with obese children (Vansteenkiste, Simons, Lens, Soenens, & Matos, 2004; Studies 1 & 2). Previous studies have shown that such children are highly concerned about the extrinsic goal of appearing attractive (Braet, Mervielde, & Vandereycken, 1997). The obese children were told that reading a text about nutritional information was useful for attaining either the intrinsic goal of health and physical fitness or the extrinsic goal of physical attractiveness and beauty. Based on the match perspective, portraying the reading activity as contributing to the highly valued goal of physical attractiveness should promote learning. However, as in the study among business students, the extrinsic (relative to intrinsic) goal framing undermined their learning as demonstrated both one week and four weeks after the experimental induction.

Although the studies with business students and obese children are consistent with SDT, they only provide indirect evidence, because participants' own value-orientations were not directly assessed. Therefore, Timmermans, Vansteenkiste, and Lens (2004) did a study in which they assessed fifth and sixth grade children's intrinsic and extrinsic value-orientations prior to their placement in either the intrinsic or extrinsic goal framing condition. Furthermore, one week prior to the experiment, children were given a questionnaire that listed various pro-social activities. For each activity, children needed to indicate why they would value participating in it. An intrinsic and an extrinsic goal option were given, and participants chose one. One of the listed activities (i.e., supporting a charity organization for tuberculosis patients) formed the content of the text material participants would have to read during the experiment one week later. Interestingly, for that activity, about half the children focused on the intrinsic goal (i.e., community contribution) and half on the extrinsic goal (i.e., social popularity).

Subsequently, during the actual experiment, participants were told either that learning about the pro-social activity would serve an intrinsic goal or that it would serve an extrinsic goal. Hence, the environmentally presented goal either matched or did not match (a) the participants own value-orientations, and (b) their intrinsic or extrinsic perception of the activity they had provided one week before. Consistent with SDT, intrinsic goal framing promoted achievement and persistence compared to extrinsic goal framing. The lack of an interaction effect between the intrinsic versus extrinsic goal framing and individuals' own intrinsic versus extrinsic goal orientation or their own intrinsic versus extrinsic goal perception of the activity suggests that these main effects occurred (a) for both intrinsically and extrinsically oriented individuals, and (b) for individuals who perceived the task as serving an intrinsic goal or an extrinsic goal.

Although more empirical work is needed, these initial studies show that promoting extrinsic goals yields considerable learning costs for everyone, even for extrinsically oriented individuals. These findings fit with SDT's contention that not all types of goal framing will yield similar implications (Ryan et al., 1996). Some types of goal environments (i.e., extrinsic) are associated with poorer learning, presumably because they are less likely to satisfy people's basic psychological needs.

Conclusion

The initial work leading to self-determination theory was concerned primarily with detailing the environmental factors (e.g., rewards, deadlines, surveillance etc.) that forestall individuals' natural tendency to pursue inherently satisfying activities (Deci, 1975).

However, in the last two decades the intrinsic-extrinsic motivation distinction was replaced by a more refined conceptualization, which recognized that individuals have a natural tendency to internalize initially externally prompted behaviors, so they will be enacted with a sense of autonomy and willingness. The differentiation between autonomous motivation and controlled motivations and the contexts that tend to induce these different motivations (i.e., autonomy-supportive vs. controlling) have proven useful in predicting students' investment in learning activities, persistence, and level of achievement (Reeve, Deci, & Ryan, 2004).

In addition to the initial and the refined conceptualizations of the quality of students' motives for studying, SDT researchers (Kasser & Ryan, 1996) also gradually paid more attention to the goal-contents students focus on. Individuals are said to have a natural tendency to focus on intrinsic and growth-oriented rather than extrinsic and outward-oriented goals. Whereas this qualitative dimension of motivation was initially used to predict well-being, most recently, it has been related to learning, achievement and persistence. In a series of experimental studies, it was found that portraying activities as serving the attainment of an intrinsic rather than an extrinsic goal promotes deep processing of learning material, conceptual learning, and both short-term and long-term persistence. These effects were found to occur because intrinsic goal framing induces a different quality of motivation (i.e., it promotes a task orientation). These findings were obtained across diverse age groups, intrinsic and extrinsic goal-content manipulations, types of learning activities, and across intrinsic and extrinsic goal-oriented individuals. Extrinsic goal framing yielded some positive effects; namely, it promotes as much rote learning as does intrinsic goal framing, and it results in somewhat higher persistence over the short term than does a no goal framing. However, this slight advantage in terms of short-term persistence is at substantial cost in terms of the enjoyment and valuation of the persistence, the longer-term persistence and conceptual understanding of the learning material.

Footnotes

1. The concept of extrinsic goals has been introduced by a few achievement goal-theorists as well (e.g., Ames, 1992; Maehr, 1984; Patrick, Ryan, & Pintrich, 1999; Urdan & Maehr, 1995). An extrinsic goal orientation is defined as the desire to engage in learning tasks to garner consequences external to the task itself, such as receiving rewards or avoiding punishment. It was found to predict a variety of negative outcomes, including cheating, avoidance of help seeking, the use of self-handicapping strategies, and less use of regulatory and cognitive strategies (Anderman, Griesinger, & Westerfield, 1998; Midgley & Urdan, 1995; Patrick, et al., 1999; Ryan & Pintrich, 1997). However, from the perspective of SDT, this conceptualization of extrinsic goals does not reflect a particular goal-content, but it pertains to a particular reason for studying. Within the SDT-language, the concept of extrinsic goals shares most conceptual overlap with the idea of external regulation.

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