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Intrinsic Versus Extrinsic Motivation: An Approach/Avoidance Reformulation

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The main purpose of this article is to advance an alternative perspective on the relationship between intrinsic and extrinsic motivation, and in particular to examine critically the assertion that these processes are antagonistic such that the will to learn for its own sake is inhibited by the presence of extrinsic, tangible rewards and incentives such as school grades. The presumption of an antagonistic relationship largely depends on the theoretical perspective adopted. An alternative interpretation based on need achievement theory leads to distinctly different conclusions. Exploring this new perspective allows one to identify both the conditions under which intrinsic motives may coexist with extrinsic motives as well as to consider some of the means by which intrinsic motives and caring about learning can be stimulated in their own right in school settings.

KEY WORDS: intrinsic motivation; extrinsic motivation; achievement; self-worth.

INTRODUCTION

It has long been thought that the offering of extrinsic payoffs—praise, gold stars, and school grades—inhibits the will of students to learn (for a review, see Kohn, 1993). This view is sustained by the widely held assumption that intrinsic and extrinsic motivation are not just separate processes, but incompatible, if not antagonistic (Deci, 1971). Observers appear to have plenty of reason for their alarm regarding the allegedly negative influence of extrinsic rewards on a sense of personal commitment to learning. For one

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thing, the kinds of rewards that dominate in schools are by their very nature extrinsic, extrinsic because they are thought to be unrelated to the act of learning itself. This is troublesome because the offering of extrinsic incentives to induce otherwise reluctant students to study, may focus attention on the tangible payoffs themselves rather than on reinforcing the benefits of learning (Kruglanski, 1978). As a result, it is feared that learning may become the means to an end, that is, merely a way to get rewards, and that when these rewards are no longer available, the willingness to continue learning will likely dissipate (Condry and Chambers, 1978). In addition, according to some observers, when teachers attempt to encourage intrinsic behavior directly—for example, by acknowledging students for pursuing already established interests such as poetry writing—then ironically, these activities may be discouraged. This is the so-called *overjustification effect* (Lepper *et al.*). Such discouragement is believed to occur because the offering of additional rewards devalues an already self-justifiable activity, which from the student's perspective translates as "If someone has to pay me for doing this, it must not be worth doing for its own sake." This reasoning gives credence to the view that intrinsic objectives and extrinsic rewards are by their very nature antagonistic.

According to these arguments, then, students are likely to be placed in a kind of double jeopardy by the use of extrinsic rewards when it comes to promoting intrinsic engagement and valuing what they are learning. Not only may students be distracted from satisfying already established interests when they are rewarded for their efforts, but also, when extrinsic rewards are offered as inducements for undertaking a task, interesting or not, gaining the incentive itself may become the goal, not learning. Neither dynamic bodes well for the promotion of learning for its own sake, nor for the appreciation of what is learned (Müeller and Covington, 2000). Indeed, excessive reliance on extrinsic motivators such as grades and gold stars has been singled out by some observers as a major threat to personal engagement and creative expression among students (e.g., Kohn, 1993). And there is little doubt that schools are dominated by an elaborate system of tangible incentives and inducements, all of which are intended to motivate and control student learning. For example, rewards for good behavior such as compliance with teacher authority or for noteworthy academic accomplishments include social reinforcers such as teacher praise and recognition for students. School grades are the final embodiment of all such extrinsic inducements. The seminal importance of grades evolves from their formal, summative power as a single index for judging overall success and failure in school (Leonard, 1968). Moreover, grades enjoy great credibility both among parents and college admission officers that explains why many students become grade driven, not to say, "grade grubbing" (McGraw, 1978). This grade focus begins surprisingly early in life. There appears to be at least two reasons for

this increasing preoccupation with grades. First, as students grow older they increasingly make the link between grades and access to higher education, which in turn represents the gateway to prestigious occupations. Second, as children grow older, their sense of self-worth comes to depend more and more on the ability to achieve competitively (Harari and Covington, 1981). As a result, nothing else contributes more to a child's sense of worth than does a good report card, nor discourages it so completely as do poor grades (Oakes, 1985). Given this perspective, it comes as no surprise to learn that virtually all the students in our college samples rate achieving the highest grade possible as the main reason for learning, with such reasons as increasing one's knowledge or undertaking work as a matter of personal challenge rated far less important (Covington and Wiedenhaupt, 1997).

If high grades become increasingly important as students grow older, not only as indications of their personal worth but also as passports to prestigious occupations, then what becomes of the intrinsic value of learning? The fundamental question addressed by the research reported here asks whether or not intrinsic objectives can coexist to any degree in the face of a performance mentality based on striving for external incentives such as school grades. Our inquiry also aims to identify both the conditions under which intrinsic motives may coexist with extrinsic motives as well as the means by which personal interest in learning can be stimulated in its own right.

In pursuing these objectives, we relied heavily on the research conducted by the Teaching/Learning Project at the University of California at Berkeley (Covington, 1992, 1998). The database includes 5-yearly cohorts of some 500 Berkeley undergraduates, all of whom were enrolled in different offerings of the introductory psychology course taught by the first author. Although Berkeley undergraduates are obviously unrepresentative of students at large, in one important way they are a perfect group to inform the issues we chose to study. Among what other group does caring about learning for its own sake hang more delicately in the balance than for these students whose very sense of self is defined so completely by a long history of extraordinary, grade-driven academic successes? Yet, the use of these students clearly limits the generalizability of this research. For this reason we offer our findings largely as a means to raise motivational issues that may have broader application across the grade levels and for a wider variety of student groups.

A PREVIEW

The most important findings from the research were among the first to emerge. Our initial, informal interviews with students provided unmistakable evidence that much of what students learn and retain is acquired out of

personal interest and not just for the sake of achieving high grades. These early impressions were supported by a series of more formal inquiries that involved self-report questionnaires and brief follow-up essays designed to determine what aspects of intrinsically obtained knowledge were most valued by students, how frequently such knowledge evolved, and how deeply these values were held.

These inquiries convinced us of the durability and depth of student appreciation for much of what they were learning, quite apart from any immediate grade benefits. But assuming that such an appreciation was genuine, we wondered by what mechanisms could intrinsic values exist, even flourish, in the presence of the harsh selective sorting of students, an overemphasis on extrinsically conditioned rewards, and a dominant grade focus? We began by asking ourselves whether the traditional distinction between intrinsic and extrinsic motivation was helpful to our inquiries or if we first needed to reconsider the nature of intrinsic motivation in fundamentally different terms?

In the end, we decided that the classic intrinsic/extrinsic dichotomy was not a fruitful starting point for our deliberations. Rather, we concluded, first, that it is not the offering of rewards per se—nor their intrinsic or extrinsic character—as much as it is the fear of negative reinforcers that is the root cause of the threat to learning for its own sake. Negative reinforcers involve payoffs, not for achieving something positive, such as completing an assignment on time, but for avoiding something abrasive, as in the case of the student whose reason for studying is to avoid failing. Second, we concluded that an appreciation for learning, when it does occur in such failure-threatening contexts, is more a matter of the reasons for achieving than of the nature of the rewards themselves. For example, striving for high grades as a way to demonstrate superior ability tends to eclipse the inherent value in what is being learned.

This line of reasoning was not meant to denigrate the role of rewards. Rewards play a crucial role in this drama, but not in the ways we initially thought. In essence, we came to appreciate more fully that different kinds of incentives call out different student behavior (Bandura, 1982).

All classrooms reflect some kind of reward structure within which all academic work occurs (Doyle, 1983). It is this structure that transmits information to students about what they must do if they want to be successful. For example, in what Alschuler (1973) calls failure-oriented (competitive) classrooms, the rules of the learning game require that an inadequate supply of rewards (e.g., good grades) be distributed unequally, with the greatest number of rewards going to the best performers or to those who learn the quickest. This amounts to a zero-sum scoring system: if one student (player) wins (or makes points), then other students must lose (points).

Because of the competitive scramble for only a few rewards, the majority of students must struggle to avoid failure rather than to approach success. And, if students are unsuccessful in achieving their grade goals, especially if they interpret their failures as evidence that they are unworthy, then the fear of being judged incompetent by others is potentially devastating. Ability-linked anxiety narrows one's attention to matters of self-preservation, especially the creation of self-serving excuses to deflect the causes of a poor performance away from insufficient ability (Thompson, 1993, 1996; Urdan *et al.*, 1998). Such a self-serving, defensive agenda bodes ill for the acquisition of knowledge, let alone valuing what one is learning. In effect, we concluded that it is not necessarily the extrinsic nature of rewards, nor even the offering of rewards in general, that is the main impediment to valuing what one is learning; rather it is the *scarcity* of these rewards. In fact, the withholding of rewards, especially if they are merited, amounts to a form of punishment (Kohn, 1993). This is precisely what happens under competitive rules when perfectly adequate achievements go unrewarded because the players outnumber the available rewards.

From this perspective, the incompatibility of processes implied by the classic intrinsic/extrinsic dichotomy is not merely unhelpful, but worse yet, potentially misleading because it focuses attention on the wrong culprit (Mitchel, 1982). As we will argue, the failure to appreciate what one is learning occurs whenever the individual's sense of worth becomes equated with the ability to achieve competitively within a reward-scarce environment. Moreover, the assumption of incompatibility of processes leads to conclusions that are by far too pessimistic regarding the prospects for encouraging intrinsic task engagement even in the face of extrinsic constraints.

This preview of the conceptual roadmap we followed in our inquiries is the product of hindsight. How and why we drew these particular conclusions and their consequences for our subsequent research program is the story to which we now turn.

FALSE STEPS

Once we accepted the premise that students cared deeply about learning, we turned in earnest to the question of just how vulnerable intrinsic values are in a world dominated by extrinsic inducements. One's understanding of any phenomena is always dependent on definitions. Could it be that the presumption of an incompatibility of intrinsic/extrinsic processes is largely the result of how intrinsic motivation has been defined in the past? We examined three different definitional approaches with this possibility in mind.

Experimental-Based Paradigm

The first definitional approach is a product of some laboratory investigations. When intrinsic and extrinsic processes are contrasted for experimental purposes, intrinsic motivation is often defined as the pursuit of an interesting task without expecting or receiving a tangible payoff for one's actions (For a critique, see Pittenger, 1996). Not only does this reasoning contribute to the impression that intrinsic processes cannot operate in the presence of extrinsic payoffs, but it is flawed in its disregard of an essential reality. Whatever else can be said about its nature, we know one thing for certain about intrinsic motivation: It does not operate in a reward vacuum. Human beings always anticipate some payoff for their actions, intrinsically driven or not. Our research confirmed as much. We asked a sample of our college students to suggest reasons why they or students like them might spend more time and effort on a written assignment than was necessary for a good grade. Another group was asked a similar question regarding the likely reasons that students might read supplementary text material that was not assigned to be tested. The reasons offered by students for these apparently spontaneous and intrinsically toned behaviors were not altogether high-minded. Although, naturally enough, satisfying one's curiosity was most often suggested as a reason for both scenarios, students also frequently mentioned doing extra work out of the fear (a) that in the case of the reading assignment, the materials might eventually be included on a test; or (b) that understanding these outside materials might be incidentally relevant to doing better, grade-wise; or (c) that doing extra work would guarantee that the instructor knew how serious they were about doing well. Other reasons for extra effort involved wanting to gain an advantage over fellow students, and still other respondents conceded that they went the extra mile because they would have felt badly otherwise. Clearly, it is mistaken to define intrinsic motivation as the absence of expectations for extrinsic payoffs. No such world exists. Any realistic study of intrinsic motivation must take into account not only its own unique presence—not merely the absence of material incentives—but the inevitable and simultaneous presence of other motives that may have little or nothing to do with the love of learning.

Person/Trait Paradigm

Another approach to conceptualizing intrinsic motivation assumes that intrinsic processes reflect trait-like characteristics. In effect, they are considered deep-level dispositions that reside within persons to varying degrees such that some individuals prefer and seek out intrinsic satisfactions, whereas

others are attracted to extrinsic payoffs. This proposition implies a bipolar or unidimensional model of motivation. It suggests that both intrinsic and extrinsic tendencies blend within the same individual so that everyone can be placed somewhere along a single continuum, ranging from a high intrinsic orientation at one end of the dimension to a dominantly extrinsic orientation at the other; hence the term bipolar. Although this approach assigns intrinsic motivation independent status, it nonetheless reinforces a presumption of incompatibility of processes. Intrinsic motivation still operates under a zero-sum arrangement with extrinsic motivation. The more extrinsically driven an individual, the less intrinsically oriented he or she can be. Besides reinforcing the presumption of incompatibility, this position also potentially misrepresents the processes we wished to study in yet another way. For example, what are we to make of the point midway between extrinsic and intrinsic extremes? Is this to be construed as the total absence of motivation—perhaps *amotivation* in Deci's terms (Deci, 1975). Or, alternatively, might it represent the resultant canceling out of extreme motives within the same individual? If the former interpretation is preferred, then a bipolar model leaves no room for the possibility that the achievement process can involve an interaction of motives such that individuals can be simultaneously attracted to and repelled by different sources of rewards. Actually, the weight of recent evidence suggests that intrinsic and extrinsic tendencies may best be conceived as two independent orientations, not just two endpoints on a single continuum (Pintrich, 1999; Pintrich and Garcia, 1991). As we shall see, such a reconceptualization offers new, and we believe, more effective ways to think about the issues just raised.

Reward Paradigm

The most widely accepted contemporary distinction between intrinsic and extrinsic motivation concerns the differential nature of enabling rewards. Intrinsic motivation has been defined variously as a tendency to engage in activities for their own sake, just for the pleasure derived in performing them, or for the satisfaction of curiosity. The key element linking all such definitions is that the rewards for performance reside in the actions themselves; that is, the act is its own reinforcement (Csikszentmihalyi *et al.*, 1993). Put differently, the repetition of the action, such as satisfying one's curiosity or surpassing one's previous performances, does not depend as much on external inducements as on personal satisfactions inherent in the action itself (Ryan, 1993). These rewards can include feelings of wonder, even awe; pride in a job well done; and the pleasure of learning something new. By contrast, extrinsic motivation is said to involve the performance of an action, not out

of any intrinsic satisfaction derived from the action itself, but for the sake of extrinsic payoffs—extrinsic because, as was noted earlier, these rewards are essentially unrelated to the act of learning. They include praise, gold stars, and grades.

This reward-focused distinction further perpetuates the assumption of an incompatibility of processes. It implies that intrinsic and extrinsic reasons for achieving are singularly, or even exclusively, responsive to different classes of rewards, and that no crossover is possible. Actually, however, everyday experiences suggest just the opposite. A positive, additive relationship between intrinsic and extrinsic rewards is the rule, not the exception. On the one hand, extrinsic reasons for achieving can be reinforced by initially intrinsic considerations. For example, often hobbyists convert the pursuit of their personal interests into a professional livelihood—in effect, combining business and pleasure. On the other hand, extrinsic rewards frequently bolster personal engagement in learning. Money, for example, is the epitome of tangible reinforcers. Yet, giving a young aspiring magician $20 to buy a new magic trick is likely to sustain her interest in the world of legerdemain. Although it is strictly true that the money is unrelated to the processes of becoming a skillful magician—qualifying this gift as an extrinsic inducement—it is nonetheless instrumental for "making a good thing last." The money provides further opportunities for the delicious satisfaction derived from mystifying one's friends or honing one's skills at "sleight of hand." In this sense extrinsic rewards can support intrinsically oriented endeavors, as well as sustain personal interest even after one's initial curiosity has faded. For example, what becomes of our young magician's interest once she learns how the trick is done? What sustains her in the long hours of practice needed to master the trick? Here a host of tangible payoffs will likely come into play, including the eventual internalizing of praise from her relatives and peers, which for the moment takes the form of the applause of an imagined audience as she bows before her practice mirror. The point is that the effects of extrinsic rewards on intrinsic behavior depend not so much on their tangible properties as on the purposes they serve, as in, for example, providing further opportunities for creative self-expression.

In summary, an antagonism of processes appears built into various contemporary definitions of intrinsic motivation. As a result, the possibility of an independent, even complementary, relationship between intrinsic and extrinsic processes has been largely excluded from serious consideration despite many compelling, everyday examples. This observation led us to conclude that the most fruitful approach to studying the nature and nurturing of intrinsic motivation in an extrinsic, grade-driven context is to attend, first and foremost, to the reasons that students strive to do well.

NEED ACHIEVEMENT THEORY

Focusing on an individual's reasons for learning involves the domain of motivation theory. We found the most useful motivational constructs to be those associated with need achievement theory and in particular with the distinction between approaching success and avoiding failure, proposed originally in the late 1950s and 1960s by John Atkinson (1957, 1964) and his long-time associate, David McClelland (1965).

Not only did this approach–avoidance distinction lead us to a fuller understanding of the most potent threats to intrinsic engagement in schools, but it also helped place the issue of reward incompatibility in a proper perspective by illuminating the nature of multiple, independent motives operating simultaneously (McClelland, 1980, 1985). Also, the approach–avoidance distinction led us to a resolution of the apparent paradox in which students can value learning for its own sake despite their preoccupation with grades.

As initially proposed, Atkinson's approach–avoidance theory of need achievement held that human achievement is a result of an emotional conflict between striving for success and the fear of failure. Atkinson characterized these two motivational dispositions largely in emotional terms. For example, hope for success and the anticipation of pride at winning or prevailing was said to encourage success-oriented individuals to strive for excellence. On the other hand, a capacity for experiencing shame and humiliation was thought to drive failure-oriented persons to avoid situations where they believed themselves likely to fail. It was this difference in emotional reactions (pride vs. shame) that was thought to answer the *why* questions of motivation: *why* some individuals approach learning with enthusiasm and others only with reluctance and *why* some choose easy tasks for which success is assured, whereas others tackle problems for which the likelihood of failure is exquisitely balanced against the chances for success.

According to the self-worth interpretation of need achievement theory, the approach–avoidance distinction lies at the core of self-definition (Covington, 1992; Covington and Beery, 1976). In our society, individuals are widely considered to be only as worthy as their ability to achieve. As a result, many individuals equate their personal worth with their accomplishments, and because they perceive ability as a prime ingredient for success, and inability as a major cause of failure, ability becomes critical to one's self-definition (Koestner *et al.*, 1992). Although a grade focus dominates most students, it is the different ways in which individuals define success and perceive the functional role of ability in achieving success that is the main factor by which self-esteem mechanisms operate to affect achievement. For instance, success-oriented (approach) students define success in terms of

becoming the best they can be, irrespective of the accomplishment of others. Success-oriented students value ability as much as do others, but as a tool or resource to achieve personally meaningful goals. These goals include those traditionally defined as intrinsic to a task: satisfying curiosity or overcoming a challenge. By contrast, other (avoidance) students define success (and consequently their worth) in terms of doing better than others academically. In this process these students are often forced to avoid failure, or at least to avoid the implications of failure—that they are incompetent, because the rules of competition dictate that only a few can succeed. This makes the protection of a sense of competency of the highest priority, sometimes even higher than achievement itself. This is the case when individuals handicap themselves by striving for unattainable objectives that invite failure—such as a perfect 4.0 grade average—but failure that reflects little on their ability because so few other students could be expected to attain perfection either.

Based on this interpretation of achievement dynamics, the more useful distinction for understanding the nature of intrinsic motivation and for resolving the issue of reward incompatibility is intrinsic (approach) goals versus avoidance goals. This distinction also clarifies the independent role of extrinsic motivators in the achievement process. In effect, extrinsic payoffs such as social recognition, money, and grades stand in the breach between intrinsic and avoidance goals. Extrinsic payoffs can either advance a love of learning—if they serve positive, task-oriented reasons—or interfere with caring if they are sought after for self-aggrandizing purposes. This extension of Atkinson's model is enlightening in three important ways as described below.

The Threat to Learning

First, the distinction between intrinsic and avoidance goals pinpoints the true enemy of intrinsic engagement, namely, the widespread presence of avoidance goals driven by the fear of failure. Recall our students' answers as to why they undertook apparently spontaneous acts of personal involvement in school such as reading nonrequired course materials. We wondered what could account for such behaviors that masquerade as being voluntary and intrinsic in nature when, in reality, they are often driven by desperate, fearful motivations such as the need to gain advantage over others, to prepare defensively for any testing contingency, or to avoid feeling guilty had they not participated fully, if reluctantly. These avoidance goals present a worrisome picture. Yet they are unlikely to be caused primarily by the offering of rewards such as grades or even by their extrinsic character. As we see it, the problem is not that grades are essentially foreign—or extrinsic to the act

of learning itself—but, quite the opposite: Grades have become inexorably linked to the achievement process. Grades are highly charged with personal meaning. For many students grades carry the burden of defining their worth. The underlying reality is that intrinsic values become imperiled not principally because of the tangible, extrinsic features of the rewards that dominate in school, but because all too often the individual's sense of worth becomes equated with high marks that are rendered scarce by competitive rules. This point is reinforced by the results of a subsequent inquiry in which we asked another group of undergraduates to indicate the reasons for their *not* pausing to explore or savor the personal implications of what they were studying. The vast majority of these students indicated that they failed to follow up on their curiosities, not because the potential intrinsic satisfactions of doing so were deemed inadequate, but because they could not afford the time away from studying for exams. Students feared that they would fall behind in the scramble for grades. In effect, given the pressure of school work, students felt they must choose between narrowing the focus of their study, for efficiency's sake, to what they believed would be tested versus attending to the personal meaning of what they were studying. It is this dilemma for students that forms the essence of the issues we have chosen to study. It is not an incompatibility of processes that leads to a decline in intrinsic engagement as much as it is the fact that the demands of academic life leave little room to pursue both the goals of acquisition and appreciation simultaneously.

Caring About Learning

A second benefit derived from the intrinsic versus avoidance goal distinction helps clarify our initial inquiries as to why a dominant grade focus among students does not necessarily preclude the valuing of what is being learned. Students acknowledge that they strive for the highest grade possible, but—and this is the important point—for different reasons. These reasons determine the degree to which knowledge is valued. For instance, when students strive for grades as a means to impress others or to avoid failure, learning becomes valued only to the degree that it serves to enhance one's ability status, not for any inherent merit of the material being learned. If, by contrast, the reasons for grade-striving serve a task-oriented purpose, for instance, using grades as feedback for how one can improve, then one's achievements will be appreciated more for their positive properties. In this latter case, grades are not a distraction but become a positive part of the learning process itself.

In sum, it is not the dominant grade focus that influences the degree to which learning is sought out for its own sake. Rather, the valuing of what

one learns depends on the reasons for learning and on the meaning students attach to their grades. This implies that striving for good grades and caring for learning are not always incompatible goals. The degree of compatibility is influenced by the reasons for learning.

Quadrapolar Versus Bipolar Model

A third clarification of our inquiries was aided by Atkinson's original assumption that approach and avoidance tendencies are two independent, yet covarying dimensions in which individuals can be placed not only high or low in respect to a given disposition—either approach or avoidant–but also characterized as driven simultaneously by both tendencies. Alternately, students may remain indifferent to achievement events as reflected by the relative absence of both approach and avoidance tendencies. This *quadrapolar* assumption, which is illustrated in Fig. 1, permits consideration of a far richer array of relationships between intrinsic and avoidance processes within individuals than is possible under the limited assumptions of a bipolar model (Covington and Omelich, 1991). Four groups of students emerge, each differing in their motivational characteristics.

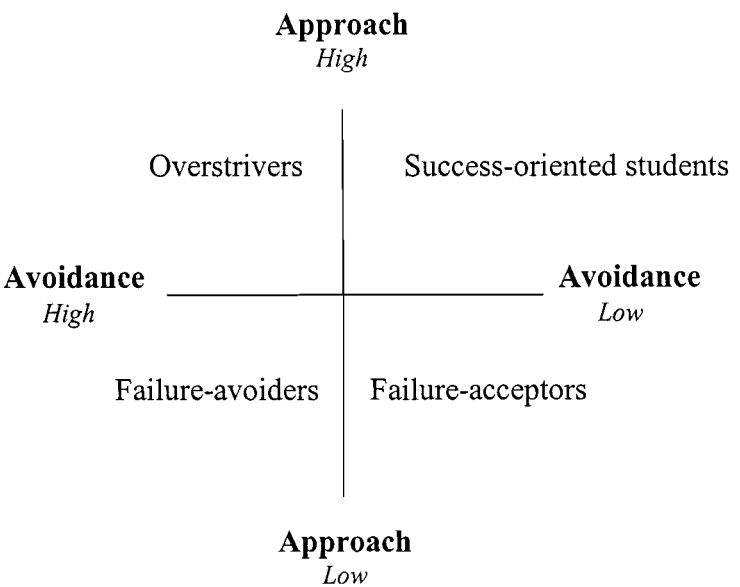

Fig. 1. Quadrapolar model of need achievement theory.

Consider the motivational pattern of each group in turn. First, comes the pure success-oriented (high approach/low avoidance) and the pure failure-avoiding (low approach/high avoidance) groups.

Failure-Avoiding Students

For failure-avoiding students the preponderance of fear-driven reasons for achieving is distinctly antagonistic when it comes to intrinsic valuing. As a result, learning is valued only to the extent that it serves to aggrandize one's ability status. The self-defeating behaviors associated with a failure-avoiding mentality are largely the creatures of negative reinforcement. For instance, defensive actions such as irrational goal-setting are repeated by failure avoiders not because such behaviors gain a positive end, but because they temporarily avoid a negative end: the anxiety associated with the prospect of being unmasked as incompetent. Feelings of relief rather than pride become the internalized emotional component of avoidance tendencies. Thus, for this group, competition for extrinsic rewards such as grades is, indeed, likely to undercut caring about learning; not, however, simply because these rewards are tangible in nature, but because of the meaning they have acquired as measures of one's worth, and because of the scant emotional consolation of having to define success as the absence of failure.

Success-Oriented Students

Contrariwise, the achievements of success-oriented students are more appreciated for their positive, personally satisfying properties because the reasons for grade-striving tend to serve a more task-oriented purpose. Far from undermining the value of what they are learning, success-oriented students actually benefit from the prospects of being graded for their efforts. Here the relationship between intrinsic goals and the availability of rewards in the form of feedback is best characterized as complementary and supportive, not antagonistic.

Overstrivers

The two additional, hybrid groups represented in the quadrapolar model embody still different motivational patterns. The first of these groups, the so-called overstrivers (Beery, 1975), are driven simultaneously both by high hopes for success and by an excessive fear of failure. Overstrivers appear to share much in common with those students identified by Elliot and

Harackiewiez (1996) as being approach-oriented but driven by performance goals that involve doing better than others. According to a self-worth interpretation, the dominant survival strategy for this group is to avoid failure by succeeding. This means that overstrivers are sustained in their drive to succeed both by the temporary relief at having not failed (negative reinforcement) and by the positive sources of pride and intrinsic appreciation that accompany noteworthy achievements. Motivationally speaking, then, the relationship between these respective sources of rewards—pride and relief—is complementary and additive, but in a perversely painful and conflicted way: pride at having succeeded and simultaneously having avoided failure (relief) on one occasion sets the stage for having to prove oneself at even higher levels of distinction on the next occasion. This is a never-ending treadmill.

Failure-Accepting Students

Finally, consider those students who exhibit a relative absence of both approach and avoidance tendencies, the so-called failure acceptors. From a self-worth perspective, these students have given up the struggle to maintain a sense of dignity via a reputation for ability because of repeated failures to perform up to their high self-expectations (Covington and Omelich, 1985). This predicament suggests yet another relationship between intrinsic and avoidant processes: indifference to both sources of rewards. Such indifference implies that threatening failure-acceptors by raising grade stakes will do little to arouse extra effort, nor will offering positive reinforcements particularly enhance task engagement. Whatever motivates these students to continue in school appears to lie outside the competitive ethos that permeates the traditional meaning of approach and avoidance motives (see Covington and Roberts, 1994).

This quadrapolar analysis suggests that the relationship between intrinsic and avoidance goals and the rewards that sustain them, respectively, varies depending on the motivational dispositions of students: For some persons the relationship appears antagonistic and subtractive; for others conflicting, but sustaining; for yet others, complementary and additive; and finally for some, disconnected.

Reconsidering Rewards

A fourth benefit of adopting an intrinsic versus avoidance distinction enriches our understanding of how extrinsic payoffs can promote intrinsic motivation. If the reasons for learning are task-oriented, the resulting actions

can be enhanced by tangible payoffs. In the earlier example of the young magician, money supported her creativity and the personal commitment necessary for its expression. The same principle applies to academic matters. Although virtually all of our students focus primarily on the prospects of getting a good grade, they are also more likely to invest greater time and energy (beyond what is necessary for a good grade) in those assignments for which there are additional tangible, yet intrinsically oriented payoffs. These tangible payoffs include the chance for students to share the results of their work with others or to explain to someone more deeply and personally about why what they learned was important to them. These are powerful incentives, and although they would normally be classified as extrinsic by some definitions, they clearly reinforce the pursuit of self-discovery and the expression of personal creativity.

These observations imply that intrinsic (approach) and extrinsic reasons for learning are both strengthened by tangible rewards, but by different kinds of tangible rewards. This proposition sheds an entirely new light on the current debate about the allegedly harmful influence of tangible rewards on the will to learn that centers on the over-justification effect. Our reasoning suggests that it is not so much the offering of tangible rewards that undercuts personal task engagement and appreciation for what is learned. Rather it is the absence of those kinds of payoffs that reinforce the importance of being involved that discourages caring about what one is learning.

ADDITIONAL INQUIRIES

If task engagement and subject-matter appreciation depend on one's reasons for learning, then what other factors might also enhance these processes? Two possibilities come to mind. First, given the preeminence of a grade focus, we reasoned that achieving one's grade goals would positively influence the degree to which students became intrinsically engaged in their work. More specifically, we assumed that being successful in one's studies promotes emotions such as hope, pride, and enjoyment—feelings that should increase an appreciation for what one is learning. By contrast, falling short of one's grade goals either intensifies one's concentration on study to the exclusion of subject-matter appreciation, or diverts one's attention to the protection of a sense of worth. Second, we also reasoned that interest in the subject-matter content would mediate the degree of personal engagement. In effect, people enjoy and appreciate learning more about what already interests them, above and beyond any grades they might receive.

We conducted a formal inquiry into the separate and joint impact on task appreciation of these two factors—interest level and grade-goal attainment

(Covington, 1999). One cohort of 500 students was asked to imagine themselves working on a hypothetical course assignment. The circumstances of this fictitious task were varied along two dimensions: first, whether students had succeeded or not, gradewise, on several similar previous assignments; and second, whether or not the subject matter of the course was personally meaningful. All students responded to each of the four possible combinations in a within-subject, repeated measures design. One between-subject factor was also introduced: type of student, either success oriented or failure avoiding. For all four scenarios our informants indicated the degree to which they would likely appreciate and value what they had learned from working on this assignment.

The results were not always anticipated or easily explained by conventional views regarding reward compatibility. First, as to anticipated outcomes, the effect for achieving or not achieving one's grade goal was significant for both levels of interest: Doing well in one's studies was associated with an increased valuing of what one is learning. Also, as was expected, the effect of subject-matter interest was significant at both levels of goal attainment: People enjoy and appreciate learning more about what interests them than about topics that hold little or no interest. Not so obvious, however, was the fact that the positive influence of subject-matter interest occurred for failure as well as for success experiences. In effect, the pursuit of one's interests offsets failure experiences when it comes to valuing learning. The power of this dynamic was indicated by a significant interaction in these data: Appreciation for learning was far greater in a failed but task-interested cause than it was when the same students succeeded, gradewise, but for subject-matter content that held little interest.

Another aspect of this same interaction was also intriguing. A combination of achieving one's grade goals on a topic of personal interest led to the greatest degree of subject-matter appreciation. In short, it is neither success nor interest alone but a synergistic combination of the two that is the most powerful catalyst for appreciation. This finding discounts the previously mentioned concern regarding the dangers to intrinsic engagement of paying people (with high grades, for instance) to pursue what already interests them—namely, the overjustification effect. Our students offered several explanations for why these concerns may be exaggerated, if not groundless. (For a recent debate on the validity of the overjustification effect, see the 1996 spring issue of the Review of Educational Research.) Some students reported, anecdotally, that doing well causes positive emotions such as pride and joy, which sustains their enthusiasm for learning more. Other students suggested that succeeding reduces worries about failing, so students are freer to explore what interests them. And according to yet other informants, doing well stimulates students to study more. The more one learns, the more

interesting the material is likely to become. Based on these anecdotal observations, it seems clear that the relation between tangible rewards such as good grades and intrinsic processes is far more complex than what many have thought. At a minimum, it seems that the availability of extrinsic rewards does not necessarily undermine interest in learning, but as we argued earlier may actually enhance the prospects for students learning more.

Finally, what of the reactions of success-oriented and failure-threatened students in the study just described? The dynamics of appreciation proved to be virtually parallel for these two groups and varied only by degree. Both groups responded positively to having succeeded, gradewise, except that success-oriented students were more appreciative of what they had learned. Both groups were adversely affected by a disappointing grade, but failure-oriented students were more impacted. Similarly, both groups responded positively when the subject matter was of personal interest, but success-oriented students were more positive still. Overall, most importantly, both groups exhibited a capacity for intrinsic engagement; in effect, the differences were relative. The personal satisfaction that accompanies learning is not the exclusive province of only a few students. This optimistic conclusion lies at the heart of the quadrapolar model, which implies that intrinsic and avoidance tendencies coexist independently within the same individual, so that in theory at least, all persons possess the capacity for intrinsic engagement to one degree or another, irrespective of the extent to which they may otherwise be driven by the prospects of avoiding failure.

From these findings, we concluded that students are likely to value what they are learning, and to enjoy the process more (1) when the dominant reasons for learning are task-oriented, not self-aggrandizing or failure avoiding; (2) when they are achieving their grade goals; and (3) when what they are studying is of personal interest.

FUTURE RESEARCH DIRECTIONS

Much of the previous research of the Berkeley Teaching/Learning Project has focused on identifying the instructional conditions that maximize student test performance and subject-matter retention, focusing primarily on the academic objectives of schooling. Now, thanks to the investigations reported here, we have begun considering how to incorporate motivational and affective goals, such as subject-matter appreciation, into these larger curriculum objectives.

Our original research on maximizing academic achievement was animated by the assumption that performance suffers whenever students must compete for a scarcity of rewards. Under conditions of scarcity, students will in fact scramble for higher grades, at least for a time, but eventually

the performances of many students will suffer owing to their adoption of avoidance-oriented strategies (Covington and Omelich, 1981, 1988). Our basic response to this dynamic was to substitute new rules of engagement that provided students with an abundance of payoffs, which varied in kind and in how they could be earned. To this end, we have made a particular study of a novel version of the basic mastery-learning paradigm, referred to as a "grade-choice arrangement" (Covington, 1992). Under this reward system students are encouraged to work for any grade they choose by amassing credits (e.g., so many points for an A, a B, etc.) with the caveat that the higher the grade to which students aspire, the better they must perform or the more they must accomplish (or do both these simultaneously). Basically, then, students still must enter a contest—not, however, competing against one another for a limited supply of rewards—but rather working to measure up individually to absolute standards of excellence that the instructor requires of all students. Our research indicates that students working under this alternative arrangement outperform comparable students working under competitive rules (Covington, 1998; Covington and Omelich, 1984).

We have isolated several mechanisms that account for this performance superiority, mechanisms that may also mediate subject-matter appreciation and intrinsic task engagement. First, we have established that measuring success against absolute standards substantially reduces the negative influence of avoidance goals on academic performance. If we are to judge from the results of our present inquiries, shifting the balance of motives in a positive direction should enhance subject-matter appreciation. Second, the presence of absolute standards also makes the relationship between the amount and quality of work required and various payoffs more explicit, thereby creating a heightened sense of fairness among students and a reduction in any ambiguity regarding grading policies. These factors not only contribute to achievement gains (Covington and Omelich, 1984), but may also, according to our current thinking, enhance intrinsic engagement as well. Third, not only do mastery students outperform those working under competitive rules, but more of them achieve their subjective grade-goals, which we now know to be a significant factor for enhancing an appreciation of what one is learning.

It is our intention now to track the extent to which those features of the grade-choice paradigm known to support achievement gains will also foster appreciation, and further to explore how performance gains in their own right may interact synergistically with growing subject-matter appreciation so as to accelerate both objectives. For example, the grade-choice paradigm allows us to explore the potential impact of student choice on intrinsic enjoyment and performance. We plan to offer many kinds of choices, ranging from choosing among different ways to express what one has learned other than by conventional testing, to choosing how much each assignment will be weighted toward one's overall grade.

Also we intend to explore the effects of rewarding students with extra grade credit for reflecting on their thought processes as they work, for savoring the implications of what they are learning, and for searching for personal meaning in their accomplishments. Paying people to engage in behaviors associated with intrinsic involvement is an interesting gamble. On the one hand, this strategy addresses directly the reality that students make time mainly for those activities where grades are at stake; on the other hand, we must ask once again whether genuine appreciation can be nurtured when extrinsic pay is involved. Our evidence suggests that it can, but at present this is only a tentative proposition and its truth will undoubtedly depend on a host of situational and personal factors.

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