

- Ohman, A., & Soares, J.J.F. (1993). On the automatic nature of phobic fear: Conditioned electrodermal responses to masked fear-relevant stimuli. *Journal of Abnormal Psychology, 102*, 121-132.
- Ohman, A., & Soares, J.J.F. (1994). "Unconscious anxiety": Phobic responses to masked stimuli. *Journal of Abnormal Psychology, 103*, 231-240.
- Ohman, A., & Soares, J.J.F. (1998). Emotional conditioning to masked stimuli: Expectancies for aversive outcomes following nonrecognized fear-irrelevant stimuli. *Journal of Experimental Psychology: General, 127*, 69-82.
- Sagan, C. (1977). *The dragons of Eden: Speculations on the evolution of human intelligence*. London: Hodder and Stoughton.
- Tomarken, A.J., Sutton, S.K., & Mineka, S. (1995). Fear-relevant illusory correlations: What types of associations promote judgmental bias? *Journal of Abnormal Psychology, 104*, 312-326.
- Wiens, S., & Ohman, A. (2002). Unawareness is more than a chance event: Comment on Lovibond and Shanks (2002). *Journal of Experimental Psychology: Animal Behavior Processes, 28*, 27-31.

Critical Thinking Questions

1. Why are the authors uniquely interested in the fear of snakes as opposed to other objects?
2. How do experiments on fear conditioning support the notion that humans are predisposed, or "hardwired" to fear snakes?
3. How do experiments on attention support the notion that humans are predisposed to fear snakes?
4. What is a fear module and why do the authors propose that it exists?

Intrinsic Versus Extrinsic Motivation in Schools: A Reconciliation

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Abstract

This article explores the nature of the relationship between intrinsic and extrinsic motivation in schools, and in particular examines critically the assertion that these processes are necessarily antagonistic. The weight of evidence suggests that rewards in the form of school grades and the focus of many students on doing well, grade-wise, need not necessarily interfere with learning for its own sake. Educational implications of these findings are considered. One such implication is that focusing on students' interests can be a valuable motivational strategy.

Keywords

motivation; achievement; appreciation

When psychologists speak of motivation, they typically refer to the reasons that individuals are aroused to action. Over the past 50 years, two quite different kinds of reasons have emerged in the thinking of psychologists: intrinsic and extrinsic reasons. Individuals are said to be driven to act for extrinsic reasons when they anticipate some kind of tangible payoff, such as good grades, recognition, or gold stars. These rewards are said to be extrinsic because they are unrelated to the action. In effect, the activity becomes a means to an end. By contrast, individuals are said to be intrinsically motivated when they engage in activities for their own sake. In this instance, the rewards reside in the actions themselves; that is, the actions are their own reinforcement. Put differently, in the case of intrinsic motivation, the repetition of an action does not depend as much on some external inducement as on the satisfaction derived from overcoming a personal challenge, learning something new, or discovering things of personal interest.

For generations, observers have extolled the virtues of learning for its own sake, not only because of the benefits of personal growth or enhanced well-being, but also because intrinsically based learning is the handmaiden to better, more efficient learning. For example, intrinsically engaged students are more likely than extrinsically driven students to employ deep-level, sophisticated study strategies in their work (Ames & Archer, 1988). Perhaps most noteworthy for establishing causal, not merely correlational, relationships are studies (e.g., Schunk, 1996) in which students were randomly assigned to varying achievement conditions. Those students who were directed to work for the goals of mastery, exploration, and appreciation demonstrated greater task involvement and used more effective learning strategies than children who were directed to focus on their performance alone.

At the same time, experts also lament the prospects of encouraging intrinsic engagement in a world controlled by extrinsic rewards (e.g., Kohn, 1993). My purpose here is to explore briefly the nature of the relationship between intrinsic and extrinsic motivation in schools, and in particular to examine critically the assertion that these processes are necessarily antagonistic, such that the will to learn for its own sake is inhibited or even destroyed by the offering of extrinsic rewards and incentives like school grades.

It is important to be clear about what the issue is. The issue is not that offering tangible rewards will necessarily interfere with learning. To the contrary, offering students tangible rewards sometimes actually increases learning, especially if the assignment is seen as a chore or boring. Rather, the issue is whether offering rewards focuses undue attention on the tangible payoffs, thereby decreasing students' appreciation of what they are learning.

OBSTACLES TO INTRINSIC ENGAGEMENT

The potentially destructive impact of tangible rewards on the will to learn for its own sake has been documented in several ways. First, there is the prospect that once these rewards are no longer available, students will show little or no inclination to continue in their studies (Covington, 1998). Second, there is the possibility that offering rewards to students for doing what already interests them may also undercut personal task involvement. For example, if a teacher tries to encourage intrinsic values directly, say, by praising students for pursuing a hobby, then, paradoxically, these interests may actually be discouraged. This phenomenon is the so-called overjustification effect (Lepper, Greene, & Nisbett, 1973). According to one interpretation, such discouragement occurs because the value of an already justifiable activity becomes suspect by the promise of additional rewards—hence the term overjustification—so that the individual reasons, "If someone has to pay me to do this, then it must not be worth doing for its own sake."

The goal of fostering a love of learning is complicated not only by offering or withholding tangible rewards, but also by the scarcity of these rewards. In many classrooms, an inadequate supply of rewards (e.g., good grades) is distributed by teachers unequally, with the greatest number of rewards going to the best performers or to the fastest learners. This arrangement is based on the false assumption that achievement is maximized when students compete for a limited number of rewards. Although this may maximize motivation, students are aroused for the wrong reasons—to win over others and to avoid losing—and these reasons eventually lead to failure and resentment (Covington, 1998). In this competitive context, grades stand as a mark of worthiness, because it is widely assumed in our society that one is only as worthy as one's ability to achieve competitively.

If high grades not only are important for the tangible future benefits they bestow—being the gateway to prestigious occupations—but also serve as an indication of one's personal worth, then what becomes of the valuing of learning in the scramble for grades? Is not the valuing and appreciation of learning marginalized? No, apparently not. There can be little doubt that students also value learning, irrespective of the grades they receive (see Covington, 1999).

A RECONCILIATION

How can we resolve this apparent contradiction? The observations of students themselves provide some answers (Covington, 1999; Covington & Wiedenhaupt, 1997).

First, students readily acknowledge that they strive for the highest grades possible, but—and this is the important point—different students have different reasons for a grade focus. It is these reasons that in turn determine the degree to which students become intrinsically engaged. For instance, when students strive for high grades as a mark of approval, to impress other people, or to avoid failure, they will value learning only to the extent that it serves to aggrandize their ability status, not for any inherent attraction of the material itself. If, by contrast, students have a task-oriented purpose in striving for high grades (e.g., if they use grades as feedback for how they can improve and learn more), then they will appreciate their accomplishments for their positive properties. In effect, it is not necessarily the presence of grades per se, or even a dominant grade focus, that influences the degree to which learning is appreciated. Rather, students' valuing of what they learn depends on their initial reasons for learning and the meaning they attach to their grades. This implies that striving for good grades and caring for learning are not necessarily incompatible goals. The degree of compatibility of these goals is influenced by the reasons for learning.

Second, the degree to which students become intrinsically engaged in their schoolwork depends in part on whether they are achieving their grade goals, that is, whether they feel successful. On the one hand, being successful in one's studies promotes an appreciation for what one is learning. On the other hand, falling short of one's grade goals may intensify one's concentration on doing better (to the point that appreciation of the subject matter is excluded), divert attention to protecting one's sense of worth, or cause feelings of hopelessness about ever succeeding, feelings that bode ill for both the goal of appreciation and the goal of achievement. Thus, the degree of goal compatibility is also influenced by experiences of success and failure.

Third, students also indicate that they often manipulate academic circumstances to create a tolerable balance between grades and caring. The most frequent strategies involve making school more interesting by deliberately seeking out what is of interest to them, even in the case of boring assignments, or arranging a course of study, or even a college major, around personal interests. Thus, the compatibility of grades and caring is also influenced by personal interests.

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

The role of personal interest in this equation is especially noteworthy. Although it is not surprising that people enjoy learning more about what already interests them, what is intriguing is the extent to which pursuing one's own interests offsets the potentially negative effects of receiving a disappointing grade. In fact, the evidence suggests that a student's appreciation for what he

or she is learning is far greater when the student is failing but interested in the task than when the same student is succeeding, gradewise, but has little interest in the subject-matter content.

A related point concerning this equation also deserves comment. Receiving a good grade, especially for interesting work, increases, not decreases, intrinsic engagement. This finding seems to contradict the previously mentioned expectation that providing people with tangible payoffs for pursuing what already interests them will dampen their enthusiasm. Students themselves offer several plausible explanations for why these worries may be exaggerated, if not groundless. Based on their experiences, some students report anecdotally that doing well causes positive feelings like pride, which in turn increases their enthusiasm for learning. Other anecdotal observations suggest that doing well reduces worry about failing, so that students are freer to explore what is most interesting. And, according to yet other students, being successful stimulates them to study more, and the more they learn, the more interesting the material is likely to become. Whatever the explanation, it seems that the effects of tangible payoffs on intrinsic processes are far from simple.

EDUCATIONAL IMPLICATIONS

What practical steps do these findings suggest for how schools can serve both the goal of disseminating knowledge and the goal of promoting an appreciation of what is learned in the face of an ever-present grade focus?

First, the most obvious implication is that a major instructional goal should be to arrange schooling around the personal interests of students. Second, obviously learning cannot always be arranged around personal preferences, nor can students always succeed. Nonetheless, instructional practices can alter the meaning of failure when it occurs. Basically, this step involves eliminating the climate of scarcity of rewards by defining success not in the relative sense of outperforming others, but rather absolutely, that is, in terms of whether students measure up to a given standard of performance, irrespective of how many other students do well or poorly (Covington & Teel, 1996). When well-defined standards of performance are provided, the failure to achieve them tends to motivate students to try harder because failure implies falling short of a goal, not falling short as a person.

Third, in addition to creating grading systems that encourage intrinsic reasons for learning, teachers should provide payoffs that actively strengthen and reward these positive reasons. Although 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 the grade) in those tasks for which there are additional tangible, yet intrinsically oriented payoffs. These payoffs include the opportunity to share the results of their work with others, or the chance to explain more deeply and personally why what they learned was important to them. This suggestion implies that, far from being incompatible, intrinsic and extrinsic reasons for learning are both encouraged by tangible rewards, but by different kinds of tangible rewards. This proposition sheds an entirely new light on the concerns raised by many experts regarding the overjustification effect. It is not the offer-

ing of tangible rewards that undercuts personal task engagement so much as it is the absence of those kinds of payoffs that encourage and recognize the importance of being involved in and caring about what one is learning.

Finally, students are the first to acknowledge a conflict between the goals of striving for high grades and enjoying learning. However, the conflict arises, they say, not out of any incompatibility of goals. Rather, the demands of school leave little room to pursue either goal fully, let alone to pursue the two goals together. As a result, students must prioritize these objectives, a process that typically favors the goal of striving for grades, and they lament what they forfeit. But prioritizing is not the same as incompatibility. The recommendations made in this review can act to balance these priorities more in favor of intrinsic engagement and a love of learning.

Recommended Reading

- Cameron, J., & Pierce, W.D. (1994). Reinforcement, reward and intrinsic motivation: A meta-analysis. *Review of Educational Research*, 64, 363-423.
- Condry, J., & Koslowski, B. (1979). Can education be made "intrinsically interesting" to children? In D. Katz (Ed.), *Current topics in early childhood education* (Vol. II, pp. 227-260). Norwood, NJ: Ablex.
- Cordova, D.I., & Lepper, M.R. (1996). Intrinsic motivation and the process of learning: Beneficial effects of contextualization, personalization and choice. *Journal of Educational Psychology*, 88, 715-730.
- Covington, M.V. (1992). *Making the grade: A self-worth perspective on motivation and school reform*. New York: Cambridge University Press.
- Elliot, A.J., & Harackiewicz, J.M. (1996). Approach and avoidance achievement goals and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology*, 70, 461-475.

Note

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References

- Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Student learning strategies and motivation processes. *Journal of Educational Psychology*, 80, 260-267.
- Covington, M.V. (1998). *The will to learn: A guide for motivating young people*. New York: Cambridge University Press.
- Covington, M.V. (1999). Caring about learning: The nature and nurturing of subject-matter appreciation. *Educational Researcher*, 34, 127-136.
- Covington, M.V., & Teel, K.M. (1996). *Overcoming student failure: Changing motives and incentives for learning*. Washington, DC: American Psychological Association.
- Covington, M.V., & Wiedenhaupt, S. (1997). Turning work into play: The nature and nurturing of intrinsic task engagement. In R. Perry & J.C. Smart (Eds.), *Effective teaching in higher education: Research and practice, special edition* (pp. 101-114). New York: Agathon Press.
- Kohn, A. (1993). *Punished by rewards*. New York: Houghton Mifflin.
- Lepper, M.R., Greene, D., & Nisbett, R.E. (1973). Undermining children's intrinsic interest with extrinsic rewards: A test of the "overjustification" hypothesis. *Journal of Personality and Social Psychology*, 28, 129-137.
- Schunk, D.H. (1996). Goal and self-evaluative influences during children's cognitive skill learning. *American Educational Research Journal*, 33, 359-382.

Critical Thinking Questions

1. What is intrinsic motivation, what is extrinsic motivation, and why is it important to make this distinction?
2. Why do grades and other tangible rewards pose a threat to intrinsic motivation?
3. How can grades and other tangible rewards enhance intrinsic motivation?
4. What educational implications does the author draw for using reward in the classroom?

Human Sexuality: How Do Men and Women Differ?

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Abstract

A large body of scientific research documents four important gender differences in sexuality. First, on a wide variety of measures, men show greater sexual desire than do women. Second, compared with men, women place greater emphasis on committed relationships as a context for sexuality. Third, aggression is more strongly linked to sexuality for men than for women. Fourth, women's sexuality tends to be more malleable and capable of change over time. These male-female differences are pervasive, affecting thoughts and feelings as well as behavior, and they characterize not only heterosexuals but lesbians and gay men as well. Implications of these patterns are considered.

Keywords

human sexuality; sexual desire; sexual orientation; sexual plasticity

A century ago, sex experts confidently asserted that men and women have strikingly different sexual natures. The rise of scientific psychology brought skepticism about this popular but unproven view, and the pendulum swung toward an emphasis on similarities between men's and women's sexuality. For example, Masters and Johnson (1966) captured attention by proposing a human sexual response cycle applicable to both sexes. Feminist scholars cautioned against exaggerating male-female differences and argued for women's sexual equality with men. Recently, psychologists have taken stock of the available scientific evidence. Reviews of empirical research on diverse aspects of human sexuality have identified four important male-female differences. These gender differences are pervasive, affecting thoughts and feelings as well as behavior, and they characterize not only heterosexuals but lesbians and gay men as well.

SEXUAL DESIRE

Sexual desire is the subjective experience of being interested in sexual objects or activities or wishing to engage in sexual activities (Regan & Berscheid, 1999). Many lines of research demonstrate that men show more interest in sex than women (see review by Baumeister, Catanese, & Vohs, 2001). Compared with women, men think about sex more often. They report more frequent sex fantasies and more frequent feelings of sexual desire. Across the life span, men rate the strength of their own sex drive higher than do their female age-mates. Men are more interested in visual sexual stimuli and more likely to spend money on such sexual products and activities as X-rated videos and visits to prostitutes.

Men and women also differ in their preferred frequency of sex. When het-