MARGARET M. CLIFFORD

# Students Need Challenge, Not Easy Success

Only by teaching students to tolerate failure for the sake of true success can educators control the national epidemic of "educational suicide."

Hundreds of thousands of apathetic students abandon their schools each year to begin lives of unemployment, poverty, crime, and psychological distress. According to Hahn (1987), "Dropout rates ranging from 40 to 60 percent in Boston, Chicago, Los Angeles, Detroit, and other major cities point to a situation of crisis proportions." The term *dropout* may not be adequate to convey the disastrous consequences of the abandonment of school by children and adolescents; *educational suicide* may be a far more appropriate label.

School abandonment is not confined to a small percentage of minority students, or low ability children, or mentally lazy kids. It is a systemic failure affecting the most gifted and knowledgeable as well as the disadvantaged, and it is threatening the social, economic, intellectual, industrial, cultural, moral, and psychological well-being of our country. Equally disturbing are students who sever themselves from the flow of knowledge while they occupy desks, like mummies.

Student apathy, indifference, and underachievement are typical precursors of school abandonment. But what causes these symptoms? Is there a remedy? What will it take to stop the waste of our intellectual and creative resources?

To address these questions, we must acknowledge that educational suicide is primarily a motivational problem—not a physical, intellectual, financial, technological, cultural, or staffing problem. Thus, we must turn to motivational theories and research as a foundation for examining this problem and for identifying solutions.

Curiously enough, modern theoretical principles of motivation do not support certain widespread practices in education. I will discuss four such discrepancies and offer suggestions for resolving them.

## Moderate Success Probability Is Essential to Motivation

The maxim, "Nothing succeeds like success," has driven educational practice for several decades. Absolute success for students has become the means *and* the end of education: It has been given higher priority than learning, and it has obstructed learning.

**We must encourage students to reach beyond their intellectual grasp and allow them the privilege of learning from mistakes.**

A major principle of current motivation theory is that tasks associated with a moderate probability of success (50 percent) provide maximum satisfaction (Atkinson 1964). Moderate probability of success is also an essential ingredient of intrinsic motivation (Lepper and Greene 1978, Csikszentmihalyi 1975, 1978). We attribute the success we experience on easy tasks to task ease; we attribute the success we experience on extremely difficult tasks to luck. Neither type of success does much to enhance self-image. It is only success at moderately difficult or truly challenging tasks that we explain in terms of personal effort, well-chosen strategies, and ability; and these explanations give rise to feelings of pride, competence, determination, satisfaction, persistence, and personal control. Even very young children show a preference for tasks that are just a bit beyond their ability (Danner and Lonky 1981).

Consistent with these motivational findings, learning theorists have repeatedly demonstrated that moderately difficult tasks are a prerequisite for maximizing intellectual development (Fischer 1980). But despite the fact that moderate challenge (implying considerable error-making) is essential for maximizing learning and opti-

mizing motivation, many educators attempt to create error-proof learning environments. They set minimum criteria and standards in hopes of ensuring success for all students. They often reduce task difficulty, overlook errors, de-emphasize failed attempts, ignore faulty performances, display "perfect papers," minimize testing, and reward error-free performance.

It is time for educators to replace easy success with challenge. We must encourage students to reach beyond their intellectual grasp and allow them the privilege of learning from mistakes. There must be a tolerance for error-making in every classroom, and gradual success rather than continual success must become the yardstick by which learning is judged. Such transformations in educational practices will not guarantee the elimination of educational suicide, but they are sure to be one giant step in that direction.

**We face the grim reality that our extraordinary efforts to produce "schools without failure" have not yielded the well-adjusted, enthusiastic, self-confident scholars we anticipated.**

### External Constraints Erode Motivation and Performance

Intrinsic motivation and performance deteriorate when external constraints such as surveillance, evaluation by others, deadlines, threats, bribes, and rewards are accentuated. Yes, even rewards are a form of constraint! The reward giver is the General who dictates rules and issues orders; rewards are used to keep the troops in line.

Means-end contingencies, as exemplified in the statement, "If you complete your homework, you may watch TV" (with homework being the means and TV the end), are another form of external constraint. Such contingencies decrease interest in the first task (homework, the means) and increase interest in the second task (TV, the end) (Boggiano and Main 1986).

Externally imposed constraints, including material rewards, decrease task interest, reduce creativity, hinder performance, and encourage passivity on the part of students—even preschoolers(Lepper and Hodell 1989)! Imposed constraints also prompt individuals to use the "minimax strategy"—to exert the minimum amount of effort needed to obtain the maximum amount of reward (Kruglanski et al. 1977). Supportive of these findings are studies showing that autonomous behavior—that which is self-determined, freely chosen, and personally controlled—elicits high task interest, creativity, cognitive flexibility, positive emotion, and persistence (Deci and Ryan 1987).

Unfortunately, constraint and lack of student autonomy are trademarks of most schools. Federal and local governments, as well as teachers, legislate academic requirements; impose guidelines; create rewards systems; mandate behavioral contracts; serve warnings of expulsion; and use rules, threats, and punishments as routine problem-solving strategies. We can legislate school attendance and the conditions for obtaining a diploma, but we cannot legislate the development of intelligence, talent, creativity, and intrinsic motivation—resources this country desperately needs.

It is time for educators to replace coercive, constraint-laden techniques with autonomy-supportive techniques. We must redesign instructional and evaluation materials and procedures so that every assignment, quiz, test, project, and discussion activity not only allows for, but routinely *requires*, carefully calculated decision making on the part of students. Instead of minimum criteria, we must define multiple criteria (levels of minimum, marginal, average, good, superior, and excellent achievement), and we must free students to choose criteria that provide optimum challenge. Constraint gives a person the desire to escape; freedom gives a person the desire to explore, expand, and create.

### Prompt, Specific Feedback Enhances Learning

A third psychological principle is that specific and prompt feedback enhances learning, performance, and motivation (Ilgen et al. 1979, Larson 1984). Informational feedback (that which reveals correct responses) increases learning (Ilgen and Moore 1987) and also promotes a feeling of increased competency (Sansone 1986). Feedback that can be used to improve future performance has powerful motivational value.

Sadly, however, the proportion of student assignments or activities that are promptly returned with informational feedback tends to be low. Students typically complete an assignment and then wait one, two, or three days (sometimes weeks) for its return. The feedback they do get often consists of a number or letter grade accompanied by ambiguous comments such as "Is this your best?" or "Keep up the good work." Precisely what is good or what needs improving is seldom communicated.

But, even if we could convince teachers of the value of giving students immediate, specific, informational feedback, our feedback problem would still be far from solved. How can one teacher provide 25 or more students immediate feedback on their tasks? Some educators argue that the solution to the feedback problem lies in having a tutor or teacher aide for every couple of students. Others argue that adequate student feedback will require an increased use of computer technology. However, there are less expensive alternatives. First, answer keys for students should be more plentiful. Resource books containing review and study activities should be available in every subject area, and each should be accompanied by a key that is available to students.

Second, quizzes and other instructional activities, especially those that supplement basic textbooks, should be prepared with "latent image" processing. With latent image paper and pens, a student who marks a response to an item can watch a hidden symbol emerge. The symbol signals either a correct or incorrect response, and in some instances a clue or explanation for the response is revealed. Trivia and puzzle books equipped with this latent image, immediate feedback process are currently being marketed at the price of comic books.

Of course, immediate informational feedback is more difficult to provide for composition work, long-term projects, and field assignments. But this does not justify the absence of immediate feedback on the learning activities and practice exercises that are aimed at teaching concepts, relationships, and basic skills. The mere availability of answer keys and latent image materials would probably elicit an amazing amount of self-regulated learning on the part of many students.

### Moderate Risk Taking Is a Tonic for Achievement

A fourth motivational research finding is that moderate risk taking increases performance, persistence, perceived competence, self-knowledge, pride, and satisfaction (Deci and Porac 1978, Harter 1978, Trope 1979). Moderate risk taking implies a well-considered choice of an optimally challenging task, willingness to accept a moderate probability of success, and the anticipation of an outcome. It is this combination of events (which includes moderate success, self-regulated learning, and feedback) that captivates the attention, interest, and energy of card players, athletes, financial investors, lottery players, and even juvenile video arcade addicts.

Risk takers continually and freely face the probability of failing to attain the pleasure of succeeding under specified odds. From every risk-taking endeavor—whether it ends in failure or success—risk takers learn something about their skill and choice of strategy, and what they learn usually prompts them to seek another risk-taking opportunity. Risk taking—especially moderate risk taking—is a mind-engaging activity that simultaneously consumes and generates energy. It is a habit that feeds itself and thus requires an unlimited supply of risk-taking opportunities.

**Risk takers continually and freely face the probability of failing to attain the pleasure of succeeding under specified odds.**

Moderate risk taking is likely to occur under the following conditions.

- The success probability for each alternative is clear and unambiguous.
- Imposed external constraints are minimized.
- Variable payoff (the value of success increases as risk increases) in contrast to fixed payoff is available.
- The benefits of risk taking can be anticipated.

My own recent research on academic risk taking with grade school, high school, and college students generally supports these conclusions. Students do, in fact, freely choose more difficult problems (a) when the number of points offered increases with the difficulty level of problems, (b) when the risk-taking task is presented within a game or practice situation (i.e., imposed constraint or threat is minimized), and (c) when additional opportunities for risk taking are anticipated (relatively high risk taking will occur on a practice exercise when students know they will be able to apply the information learned to an upcoming test). In the absence of these conditions we have seen students choose tasks that are as much as one-and-a-half years below their achievement level (Clifford 1988). Finally, students who take moderately high risks express high task interest even though they experience considerable error making.

In summary, risk-taking opportunities for students should be (a) plentiful, (b) readily available, (c) accompanied by explicit information about success probabilities, (d) accompanied by immediate feedback that communicates competency and error information, (e) associated with payoffs that vary with task difficulty, (f) relatively free from externally imposed evaluation, and (g) presented in relaxing and nonthreatening environments.

In today's educational world, however, there are few opportunities for students to engage in academic risk taking and no incentives to do so. Choices are seldom provided within tests or assignments, and rarely are variable payoffs made available. Once again, motivational theory, which identifies risk taking as a powerful source of knowledge, motivation, and skill development, conflicts with educational practice, which seeks to minimize academic risk at all costs.

We must restructure materials and procedures to encourage moderate academic risk taking on the part of students. I predict that if we fill our classrooms with optional academic risk-taking materials and opportunities so that all students have access to moderate risks, we will not only lower our educational suicide rate, but we will raise our level of academic achievement. If we give students the license to take risks and make errors, they will likely experience genuine success and the satisfaction that accompanies it.

### Using Risk Can Ensure Success

Both theory and research evidence lead to the prediction that academic risk-taking activities are a powerful means of increasing the success of our educational efforts. But how do we get students to take risks on school-related activities? Students will choose risk over certainty when the consequences of the former are more satisfying and informative. Three basic conditions are needed to ensure such outcomes.

- First, students must be allowed to

freely select from materials and activities that vary in difficulty and probability of success.

- Second, as task difficulty increases, so too must the payoffs for success.
- Third, an environment tolerant of error making and supportive of error correction must be guaranteed.

The first two conditions can be met rather easily. For example, on a 10-point quiz, composed of six 1-point items and four 2-point items, students might be asked to select and work only 6 items. The highest possible score for such quizzes is 10 and can be obtained only by correctly answering the four 2-point items and any two 1-point items. Choice and variable payoff are easily built into quizzes and many instructional and evaluation activities.

The third condition, creating an environment tolerant of error making and supportive of error correction, is more difficult to ensure. But here are six specific suggestions.

First, teachers must make a clear distinction between formative evaluation activities (tasks that guide instruction during the learning process) and summative evaluation activities (tasks used to judge one's level of achievement and to determine one's grade at the completion of the learning activity). Practice exercises, quizzes, and skill-building activities aimed at acquiring and strengthening knowledge and skills exemplify formative evaluation. These activities promote learning and skill development. They should be scored in a manner that excludes ability judgments, emphasizes error detection and correction, and encourages a search for better learning strategies. Formative evaluation activities should generally provide immediate feedback and be scored by students. It is on these activities that moderate risk taking is to be encouraged and is likely to prove beneficial.

Major examinations (unit exams and comprehensive final exams) exemplify summative evaluation; these activities are used to determine course grades. Relatively low risk taking is to be expected on such tasks, and immediate feedback may or may not be desirable.

Second, formative evaluation activities should be far more plentiful than summative. If, in fact, learning rather than grading is the primary objective of the school, the percentage of time spent on summative evaluation should be small in comparison to that spent on formative evaluation (perhaps about 1:4). There should be enough formative evaluation activities presented as risk-taking opportunities to satisfy the most enthusiastic and adventuresome learner. The more plentiful these activities are, the less anxiety-producing and aversive summative activities are likely to be.

Third, formative evaluation activities should be presented as optional; students should be enticed, not mandated, to complete these activities. Enticement might be achieved by (a) ensuring that these activities are course-relevant and varied (e.g., scrambled outlines, incomplete matrices and graphs, exercises that require error detection and correction, quizzes); (b) giving students the option of working together; (c) presenting risk-taking activities in the context of games to be played individually, with competitors, or with partners; (d) providing immediate, informational, nonthreatening feedback; and (e) defining success primarily in terms of improvement over previous performance or the amount of learning that occurs during the risk-taking activity.

Fourth, for every instructional and evaluation activity there should be at least a modest percentage of content (10 percent to 20 percent) that poses a challenge to even the best students completing the activity. Maximum development of a country's talent requires that *all* individuals (a) find challenge in tasks they attempt, (b) develop tolerance for error making, and (c) learn to adjust strategies when faced with failure. To deprive the most talented students of these opportunities is perhaps the greatest resource-development crime a country can commit.

Fifth, summative evaluation procedures should include "retake exams." Second chances will not only encourage risk taking but will provide good reasons for students to study their incorrect responses made on previous risk-taking tasks. Every error made on an initial exam and subsequently corrected on a second chance represents real learning.

Sixth, we must reinforce moderate academic risk taking instead of error-free performance or excessively high or low risk taking. Improvement scores, voluntary correction of errors, completion of optional risk-taking activities—these are behaviors that teachers should recognize and encourage.

## Toward a New Definition of Success

We face the grim reality that our extraordinary efforts to produce "schools without failure" have not yielded the well-adjusted, enthusiastic, self-confident scholars we anticipated. Our efforts to mass-produce success for every individual in every educational situation have left us with cheap reproductions of success that do not even faintly represent the real thing. This overdose of synthetic success is a primary cause of the student apathy and school abandonment plaguing our country.

To turn the trend around, we must emphasize error tolerance, not error-free learning; reward error correction, not error avoidance; ensure challenge, not easy success. Eventual success on challenging tasks, tolerance for error making, and constructive responses to failure are motivational fare that school systems should be serving up to all students. I suggest that we engage the skills of researchers, textbook authors, publishers, and educators across the country to ensure the development and marketing of attractive and effective academic risk-taking materials and procedures. If we convince these experts of the need to employ their creative efforts toward this end, we will not only stem the tide of educational suicide, but we will enhance the quality of educational success. We will witness self-regulated student success and satisfaction that will ensure the intellectual, creative, and motivational well-being of our country.□

*References*

Atkinson, J.W. (1964). *An Introduction to Motivation*. Princeton, N.J.: Van Nostrand.
Boggiano, A.K., and D.S. Main. (1986). "En-

hancing Children's Interest in Activities Used as Rewards: The Bonus Effect." *Journal of Personality and Social Psychology* 51: 1116-1126.

Clifford, M.M. (1988). "Failure Tolerance and Academic Risk Taking in Ten- to Twelve-Year-Old Students." *British Journal of Educational Psychology* 58: 15–27.

Csikszentmihalyi, M. (1975). *Beyond Boredom and Anxiety*. San Francisco: Jossey-Bass.

Csikszentimihalyi, M. (1978). "Intrinsic Rewards and Emergent Motivation." In *The Hidden Costs of Reward*, edited by M.R. Lepper and D. Greene. N.J.: Lawrence Erlbaum Associates.

Danner, F.W., and D. Lonky. (1981). "A Cognitive-Developmental Approach to the Effects of Rewards on Intrinsic Motivation." *Child Development* 52: 1043-1052.

Deci, E.L., and J. Porac. (1978). "Cognitive Evaluation Theory and the Study of Human Motivation." In *The Hidden Costs of Reward*, edited by M.R. Lepper and D. Greene. Hillsdale, N.J.: Lawrence Erlbaum Associates.

Deci, E.L., and R.M. Ryan. (1987). "The Support of Autonomy and the Control of Behavior." *Journal of Personality and Social Psychology* 53: 1024-1037.

Fischer, K.W. (1980). "Learning as the Development of Organized Behavior." *Journal of Structural Learning* 3: 253–267.

Hahn, A. (1987). "Reaching Out to America's Dropouts: What to Do?" *Phi Delta Kappan* 69: 256–263.

Harter, S. (1978). "Effectance Motivation Reconsidered: Toward a Developmental Model." *Human Development* 1: 34–64.

Ilgen, D.R., and C.F. Moore. (1987). "Types and Choices of Performance Feedback." *Journal of Applied Psychology* 72: 401–406.

Ilgen, D.R., C.D. Fischer, and M.S. Taylor. (1979). "Consequences of Individual Feedback on Behavior in Organizations." *Journal of Applied Psychology* 64: 349–371.

Kruglanski, A., C. Stein, and A. Riter. (1977). "Contingencies of Exogenous Reward and Task Performance: On the 'Minimax' Strategy in Instrumental Behavior." *Journal of Applied Social Psychology* 2: 141–148.

Larson, J.R., Jr. (1984). "The Performance Feedback Process: A Preliminary Model." *Organizational Behavior and Human Performance* 33: 42–76.

Lepper, M.R., and D. Greene. (1978). *The Hidden Costs of Reward*. Hillsdale, N.J.: Lawrence Erlbaum Associates.

Lepper, M.R., and M. Hodell. (1989). "Intrinsic Motivation in the Classroom." In *Motivation in Education, Vol. 3*, edited by C. Ames and R. Ames. N.Y.: Academic Press.

Sansone, C. (1986). "A Question of Competence: The Effects of Competence and Task Feedback on Intrinsic Motivation." *Journal of Personality and Social Psychology* 51: 918–931.

Trope, Y. (1979). "Uncertainty Reducing Properties of Achievement Tasks." *Journal of Personality and Social Psychology* 37: 1505-1518.

**Margaret M. Clifford** is Professor of Educational Psychology, University of Iowa, College of Education, Iowa City, IA 52242.