

Space for Notes



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Chapter 8

Lures for Learning: Why Behaviorism Doesn't Work in the Classroom

[Unlike] a hundred years ago ... the approved view to-day is that an intrinsic interest in the activity regardless of ulterior consequences is an enormously superior means of learning.

-Edward L Thorndike. 1935

WHEN THEY FIRST GET to school, they are endlessly fascinated by the world. They are filled with delight by their newfound ability to print their own names in huge, shaky letters, to count everything in sight, to decode the signs they see around them. They sit on the floor at story time, eyes wide and jaws slack, listening raptly as the teacher reads. They come home bubbling with new facts and new connections between facts. "You know what we learned today?" they say.

By the time the last bell has rung, the spell has been broken. Their eyes have narrowed. They complain about homework. They count the minutes until the end of the period, the days left before the weekend, the weeks they must endure until the next vacation. "Do we have to know this?" they ask.

I am painting with broad strokes here. In truth, the process is a little different for each child; it may take place in a few days or a few years or (in a few fortunate cases) not at all. It may even be worse than what I have described: students may be left not only regarding learning as a chore but regarding themselves as unequal to the task. In any case, there is nothing natural about these changes. They cannot be written off as an archetypal loss of innocence, an inevitable developmental progression. Rather, if children's enthusiasm is smothered, it is a direct result of something that happens in our schools. No single factor can completely account for this dismaying transformation, but there is one feature of American education that goes a long way toward explaining it: "Do this and you'll get that."

Two recent studies of elementary school teaching confirm what everyone already knows: rewards are used constantly in nearly every classroom to try to motivate children and improve their performance. They are offered stickers and stars, edible treats and extra recess, grades and awards. New goodies are substituted as students get older, but the Skinnerian formula follows them. Often they are rewarded for getting rewards: a good set of grades means a place on the honor roll, perhaps a special ID card, a basket of freebies at local stores, and even cash from parents. One newspaper article describing such incentives begins, "Your kids won't study? Don't ground them, pay them."

When rewards don't succeed at enhancing students' interest and achievement, we offer new rewards. (It is remarkable how often, in both our public and private lives, we react to the failure of a given strategy by doing it some more.) When this too proves ineffective, we put the blame on the students themselves, deciding that they must lack ability or are just too lazy to make an effort. Perhaps we sigh and reconcile ourselves to the idea that "it is not realistic to expect students to develop motivation to learn in classrooms."

For those who look at education from a public policy perspective, issuing reports on American schooling, serving on task forces, or publishing columns, the solution to whatever is wrong with the system invariably takes the form of some combination of carrots and sticks: teachers ought to be rewarded or punished for *their* performance; schools should be threatened with lower enrollment if they do not somehow whip themselves into shape and successfully compete for students. Free market conservatives, heaping scorn on teachers' unions for resisting such plans, argue that "nobody changes without incentives." But the unions, or at least their most visible representatives, disagree only about specific policies. On the underlying philosophy, they speak the same language. "No system really works unless it operates with incentives," declares American Federation of Teachers president Albert Shanker's And *The New Republic* chimes in: "People respond to incentives."

This sort of doctrinal consistency is a rare and extraordinary thing to behold. Pop behaviorism informs virtually every aspect of American education and also shapes the perspective of most of its critics.

When so much of what happens to our children rides on a single theory, it's worth pausing to ask whether it accords with what we know of how people learn.

The Motivation to Learn

If we start from scratch, setting aside everything we think we know about grades and other motivational inducements, three facts eventually present themselves.

Fact 1: Young children don't need to be rewarded to learn. The children who arrive at school every weekday morning represent a range of interests and abilities and circumstances. Some come from homes where intellectual curiosity is encouraged, some from places where it is a challenge just to survive. But the fact that children are not equally receptive to what the teacher is doing at any given moment should not distract us from recognizing that the desire to learn itself is natural.

Martin Hoffman, a researcher who specializes in the study of empathy, once said that parents and teachers who want to help children become socially responsive are not working alone: they have an "ally within the child." Exactly the same may be said of adults interested in fostering intellectual development. "Children are disposed to try to make sense out of their environments,"⁸ and as nearly every parent of a preschooler or kindergartner will attest, they play with words and numbers and ideas, asking questions ceaselessly, with as purely intrinsic a motivation as can be imagined. As children progress through elementary school, though, their approach to learning becomes increasingly extrinsic (see page 91), to the point that careful observers find "little evidence of student motivation to learn in the typical [American] classroom."

Fact 2: At any age, rewards are less effective than intrinsic motivation for promoting effective learning. The point here is quite simple: just as adults who love their work will invariably do a better job than those goaded with artificial incentives, so children are more likely to be optimal learners if they are interested in what they are learning.

Several studies have found a positive correlation between intrinsic motivation and academic achievement for children of different ages. Most of this work has been correlational, which means that we can't necessarily assume the child's motivation causes achievement to go up or down; indeed. There is reason to think that achievement may affect motivation, too. Still, at least one researcher has concluded there is a causal relationship: "reduced intrinsic motivation produces achievement deficits."

When we look at how children view a particular assignment, the

relationship is even more impressive. One group of researchers tried to sort out the factors that helped third and fourth graders remember what they had been reading. They found that how interested the students were in the passage was *thirty times* more important than how "readable" the passage was. Based on the evidence reviewed in chapter 3, we would expect intrinsic interest to play an even more prominent role in the sort of learning that involves conceptual and creative thinking.

There may be some disagreement about *why* interested learners are likely to be effective learners, but the fact itself is hard to dispute. As the epigraph to this chapter indicates, even Thorndike, the grandfather of behaviorism, acknowledged it. Indeed, the finding hardly seems controversial: if kids like what they're doing, they do it better; who could disagree with that? But the point is actually more subversive of the conventional educational wisdom than it may appear. For example, many teachers and parents talk about motivation as if it were a single quality, something that students have to a greater or lesser degree. The research I have just mentioned is so important because it shows that what matters is not just how motivated someone is but the source and nature of that motivation. Even copious amounts of extrinsic motivation--wanting to do well in order to obtain some goody--may actually interfere with achievement.

For another thing, a number of traditionalists grumble that the trouble with our schools today is that work is made to seem like fun. (Would that this were true!) If the point here is that not everything enjoyable is of educational value, it is hard to disagree. But the evidence clearly refutes the dour, puritanical notion that anything important must be unpleasant--or conversely, that anything children are eager to do must be worthless. When students are enthusiastic and motivated, they may not be jumping for joy all day, Jere Brophy points out, but they will be more likely to take seriously the things they are learning, "find them meaningful and worthwhile, and try to get the intended benefit from them."

Once, when I was a high school teacher in the early 1980s, I gave a ride to a fifteen-year-old girl who had no particular interest in anything she was being taught. Awkward and taciturn, she spoke only to ask if I would turn on the car radio. She then proceeded to sing along with every song that was played for the duration of the ride, displaying not only more enthusiasm than I had thought possible but also a rather remarkable memory. Relating the event to my colleagues later, I shook my head and smiled condescendingly at how this girl, a washout in the classroom, had somehow managed to learn Top Forty lyrics to perfection.

Only later did I realize that the girl had something to teach me about motivation and its relationship to achievement. If we teachers had never seen her steel-trap memory in action, or witnessed the look of total absorption I glimpsed in the car that day, that was not necessarily just a reflection of her misplaced priorities. It may have said more about what was going on in the classes she sat through the curriculum and the motivational strategies being used. No one had to promise her an A for learning all those songs, or threaten her with an F for messing up. Her most impressive achievement did not require carrots and sticks. It may have required their absence.

For all our talk about motivation, I think we often fail to recognize a truth that is staring us in the face: if educators are able to create the conditions under which children can become engaged with academic tasks, the acquisition of intellectual skills will probably follow. We want students to become rigorous thinkers, accomplished readers and writers and problem solvers who can make connections and distinctions between ideas. But the most reliable guide to a process that is promoting these things is not grades or test scores: it is the student's level of interest. Educators and parents ought to be focusing

their attention on whether students read on their own and come home chattering about what they learned that day. It is theoretically possible for a child to be highly intrinsically motivated and still perform poorly. But the number of such students, I warrant, will never be great.

Now consider the converse: performing well, jumping through the hoops, doing all the homework, studying for the tests, making the grades, grooming the transcript, pleasing the adults--and hating every minute of it. This profile fits millions of children. They are learners, yes, but reluctant, other-directed learners who have been trained to read everything that is assigned and nothing that is not assigned. They are, in Montaigne's unsettling phrase, "mules laden with books." More than three decades ago, Jerome Bruner described the results of this paint-by-number approach to achievement, focusing on very successful students who are "seekers after the 'right way to do it':

Their capacity for transforming their learning into viable thought structures tends to be lower than [that of] children merely achieving at levels predicted by intelligence tests.... They develop rote abilities and depend upon being able to 'give back' what is expected rather than to make it into something that relates to the rest of their cognitive life. As Maimonides would say, their learning is not their own.

But now I must confess that I have another agenda as well. I do not see interest merely as a means to the end of achievement. Even if it were just as easy to be a successful learner without intrinsic motivation, I believe that the desire to wrestle with ideas, sample literature, and think like a scientist is also valuable. I think we should want children who want to learn, who not only have reading skills but actually read. As Richard Ryan and a colleague argue, it is not enough "to conceive of the central goal of 12 years of mandatory schooling as merely a cognitive outcome." Instead, we should aim for children who are "willing and even enthusiastic about achieving something in school, curious and excited by learning to the point of seeking out opportunities to follow their interests beyond the boundaries of school."

Few are likely to quarrel with such a goal, *yet* motivation as an end, not merely a means, seems to be missing from most of the national discussion about what is wrong with our schools and how to fix them. (Indeed, it is spoken of too rarely even in terms of its contribution to achievement.) To raise the issue is, by implication, to inquire into the very purpose of an education--a disconcerting prospect, perhaps, for those whose objective is to turn out adequately skilled workers who can increase corporate profits." If, like John Nicholls, we are put off by talk about "investing in education," a phrase that "seems to express a desire for skills that will pay rather than a passion to make things of value"; if, like Charles Silberman, we think school "should prepare people not just to earn a living but to live a life--a creative, humane, and sensitive life," then children's attitudes toward learning are at least as important as how well they perform at any given task.

The gist of Fact 2, though, is that even if what matters to us is how well children learn, we still have to focus on intrinsic motivation since it is far more effective than rewards at producing excellence. That in turn means we have to be concerned with the fact that this critical ingredient begins to evaporate after a few years of schooling. How does this happen? Go back to Bruner's description of the unimaginative overachiever. That style, "in which the child is seeking cues as to how to conform to what is expected of him ... starts in response to the rewards of parental or teacher approval," he argues. And this leads us to ...

Fact 3: Rewards for learning undermine intrinsic motivation. It would be bad enough if high grades, stickers, and other Skinnerian

inducements just weren't very good at helping children learn. The tragedy is that they also vitiate the sort of motivation that *does* help. Carole Ames and Carol Dweck, two of our most penetrating thinkers on the subject of academic motivation, have independently pointed out that we cannot explain children's lack of interest in learning simply by citing low ability, poor performance, or low self-esteem, although these factors may play some role. The decisive issue, it turns out, concerns students' goals with respect to learning. If teachers--or, according to one study, parents--emphasize the value of academic accomplishment in terms of the rewards it will bring, students' interest in what they are learning will almost certainly decline. "All rewards have the same effect," one writer declares. "They dilute the pure joy that comes from success itself."

Because I have already laid out the arguments and evidence for this effect in chapter 5, including a number of examples and studies relevant to learning in particular, there is no need to describe again how extrinsic motivators undermine intrinsic motivation. Instead, I want to focus on two reasons for this effect, each of which has been the subject of considerable attention by education researchers: the use of controlling techniques in the classroom, and the emphasis on how well students are performing. The work on these topics doesn't always make explicit reference to rewards, but both frameworks are clearly relevant to the practice of grading and the use of other extrinsic motivators with students.

Making Students Learn

A top corporate executive, accustomed to the exercise of power, lamented not too long ago about the decline of education in this country. Children, he declared, must be "made to understand the importance of learning." The approach captured in this short phrase is emblematic of what is wrong with American schooling. The aggressive attempt to "make" children do things--and even more absurd, "make" them understand why they should care about what they have been made to do--is a recipe for failure. If, to paraphrase a famous critical report, an unfriendly foreign power had attempted to impose on America a mediocre educational system, it could have devised no better plan than to establish mechanisms for tightly controlling what students do in school.

In saying this, it must immediately be noted, I am not arguing that educators ought to stop providing guidance or instruction, that children should be free of all structures so they can learn entirely on their own. In chapter 11, I will say more about what it means to provide students with a reasonable degree of autonomy. For now it should be enough to point out that we have a very long way to go before we run the risk of allowing too much freedom. At present, says William Glasser, "coercive teachers are the rule, not the exception, in our schools.... We pressure students to learn what they do not want to learn, and then punish them with low grades when they do not learn it." The result, he adds, is that "we lose them as learners."

To control students is to force them to accommodate to a preestablished curriculum. It is to tell them not only what they have to learn but how they have to learn it and what will happen to them if they don't--or what they will get if they do. Tests are used not so much to see what students need help with but to compel them to do the work that has been assigned. Rewards, of course, are only one ingredient of this bitter bouillabaisse, but the concept of control helps us understand how it is that rewards contribute to turning eager learners into antsy clock-watchers.

Every teacher, principal, and educational administrator in the country ought to take a moment each Monday morning to read aloud the following

three sentences by Richard Ryan and Jerome Stiller:

The more we try to measure, control, and pressure learning from without, the more we obstruct (the tendencies of students to be actively involved and to participate in their own education. Not only does this insult in a failure of students to absorb the cognitive agenda imparted by educators, but it also creates deleterious consequences for the affective agendas of schools [that is, how students feel about learning].... Externally imposed evaluations, goals, rewards, and pressures seem to create a style of teaching and learning that is antithetical to quality learning outcomes in school, that is, learning characterized by durability, depth, and integration.

There are values lurking in this statement, to be sure; it is assumed that a deep, lasting education, and even an active role for students in it, is desirable. But Ryan and Stiller are primarily summarizing empirical findings here, findings that are not very well known. Whatever one's feelings about the intrinsic merit of controlling strategies, they have certain predictable consequences, at least within our culture, that cannot be ignored.

Telling students exactly what they have to do, or using extrinsic incentives to get them to do it, often contributes to feelings of anxiety and even helplessness. Some children, instead of rebelling against coercion, simply relinquish their autonomy. In one study, ten- and eleven-year-olds who received controlling evaluations of their performance were much more likely to let the experimenter pick the next task for them, as compared to children who had just heard informational feedback. High school students, accustomed to a highly directive style of instruction and suddenly asked to think for themselves, have been known to insist that they have "a right to be told what to do.") These results, besides being troubling in their own right, have ominous implications for learning. Research has demonstrated that feelings of anxiety and helplessness are associated with lower-quality performance. Moreover, children who lack a sense of autonomy are likely to pick tasks that don't offer much challenge.

Then there is the matter of intrinsic interest. Controlling environments have been shown consistently to reduce people's interest in whatever they are doing, even when they are doing things that would be highly motivating in other contexts. One study of thirty-five elementary school classrooms, for example, found that children who had controlling teachers displayed lower self-esteem and intrinsic motivation than did those whose teachers supported their capacity to make choices. Another study showed that a highly controlling approach used with one task reduced people's interest in a second, entirely different task. The motivation-killing features of control, in other words, can spill over to poison attitudes about new activities.

An extrinsic orientation is "associated with poorer overall performance" on academic tasks, according to Ann Boggiano and Marry Barrett. But where does that orientation come from? We cannot simply call this a child's natural "learning style" Or assume she lacks motivation. In part, someone's apparent need for rewards and punishments is a reflection of how much she has been controlled by rewards and punishments in the past. "Frequent and consistent use of controlling strategies ... may well foster a shift from an intrinsic to an extrinsic orientation."

In an autobiographical essay published in 1946, Albert Einstein reflected on his days as a student of physics some fifty years earlier. He recalled his teachers with affection but, referring to exams, said, "This coercion had such a deterring effect that after I had passed the final examination, I found the consideration of any scientific problems distasteful to me for an entire

year." In the same vein, an assessment of teaching and learning at Harvard University in 1992, based on interviews with 570 undergraduates, concluded that many students avoided taking science classes not because of the heavy workload but because of the competition for grades.

Controlling structures can drive people away from exploring valuable subjects. When they are younger, students can be forced to sit through a class, but they cannot be forced to be interested in it, or to do well. It stands to reason, as I argued above, that lower intrinsic motivation translates into lower achievement. But some researchers have demonstrated this connection directly. For example, first and second graders painted less creatively when they were given controlling instructions about how they were to handle the paints. College students who received controlling feedback about how well they were solving a puzzle--that is, comments that compared their performance to how they should be doing--didn't do as good a job as those who just received straightforward information about their performance. And children were less likely to succeed on a range of measures of classroom achievement if their parents tended not to give them much opportunity to make decisions and feel a sense of self-determination at home.

What does all this mean? The evidence strongly suggests that tighter standards, additional testing, tougher grading, or more incentives will do more harm than good. Naturally we want to make sure that students are learning, but such tactics make it more difficult for that to happen. Students are already excessively controlled, which helps explain why so many are losing (or have lost) interest in what they are doing. We can almost watch that interest drain away each time a teacher invokes a bribe ("C'mon. Ellen, you're so close to getting an A in here") or a threat ("Do you want a zero, young man?").

"The same is true of a range of other instruments of control, such as calling on students even if they have not raised their hands.

So why don't teachers stop doing these things? I think there are several plausible explanations. First, some teachers cannot imagine how else they could do their jobs, particularly when they must work with children whose behavior is difficult to deal with--or for that matter, when they simply have too many children in one room. Controlling academic strategies, in other words, can be a response to nonacademic features of the classroom.

Second, it takes more time to bring students in on the process of making decisions, and many teachers already feel there are not enough hours to do what has to be done. Third, as a former teacher who found himself relying on grades to "motivate" students, I can testify that controlling approaches can also be wielded out of desperation: I lacked the skills--and, arguably, the curriculum--to help students develop a genuine interest in learning. (The controlling strategies ultimately failed, of course. You can only promise so many A's or threaten so many F's before the returns begin to diminish. And when students finally respond to someone brandishing a grade book by saying "I don't care," the teacher is out of tricks. The effect is similar to being told by a store cashier, "I'm sorry, but we don't honor U.S. currency here," One can only stammer, "But that's all I've got!")

Finally, teachers control students when they themselves are pressured to perform. This is a point lost on policymakers who, in the name of accountability, would increase the use of rewards and punishments to which teachers are subjected. Not surprisingly, teachers who feel that administrators don't listen to their views, and who have little influence over the educational program, are particularly likely to report feelings of psychological distress. But it appears that when they feel powerless, or manipulated by the likes of merit pay, teachers are also more likely to become impatient with students for whose performance they will have to answer. When sixth graders in one experiment were promised rewards for successfully tutoring younger children, they

"devalued the younger child who was making errors," losing patience and becoming generally unpleasant (as compared with tutors who were not working for a reward). When undergraduates in another study were asked to teach people how to solve a puzzle, those who were given controlling instructions that emphasized performance standards became more demanding and controlling in how they taught. In short,

when teachers feel pressured by superiors they tend to become more controlling with their students.... [When it is] emphasized that they responsible for their students' performing up to standards ... teachers tend to ... give children less choice and less opportunity for autonomous learning. This behavior, in turn, is likely to have deleterious effects on the children's intrinsic motivation.'

The effects on the quality of learning are just as pronounced. Researchers in one experiment gave fourth-grade teachers two tasks to teach their students. Some were told that their job was "simply to help the students learn how to solve the problems"; others were warned that it was their "responsibility to make sure that students perform up to standards" and do well on a test. The result: children taught by the teachers who felt pressured did not learn the tasks as well as those whose teachers were not under the gun. Another fascinating study, meanwhile, found that the mere knowledge among students that their teacher was "extrinsically constrained" affected their own motivation. The damage done by rewards, then, is not limited to the person who gets them.

We could probably come up with other reasons to explain why teachers and administrators use extrinsic devices and other techniques of control. The key point is that they are finally ineffective and, in fact, are likely to produce a cluster of symptoms that might be described as "burnout" if displayed by an adult. In chapter II, I will discuss more promising approaches to tapping children's motivation and helping them to learn.

Tighter Control: The Case of Special Education

Controlling techniques in general, and rewards in particular, are most pervasively applied to children with special needs and challenges and to those who simply carry a label that sets them apart. These children are subjected to a relentless regimen of Skinnerian manipulation, complete with elaborate charts, point systems, and reinforcement schedules. Even teachers and clinicians who would hesitate to use such methods with other children assume it is justified for those who are classified by a distinguishing set of initials.

Consider the fate of students who are said to be "learning disabled," a category so elastic that virtually all of us could be diagnosed that way in one situation or another. Teachers report that they act in a more controlling way with such children than they do with other students. The result is that even though learning-disabled students with the behavioral goals that have been established by adults.

When these tightly controlled behavioral programs fail, the blame is placed on the specific reinforcement protocol being used or on the teacher who implements it or on the child--never on the premises of behaviorism itself. When these programs succeed in altering children's behavior, it is typically at the expense of creating "instructional dependency" and preventing them from developing "the ability to choose and to have some control over [their] own destiny [which] is one of the most important skills that can be imparted to severely handicapped students, or to anyone else for that matter."

Special education teachers, who have a very difficult job to do, are both underpaid and underappreciated. Most clearly want what is best for the

children they work with. Unfortunately, they are trapped by a system that has them, in effect, training these children as if they were pets. In many cases, they--or the educators who trained them--fail to appreciate the difference between a structured environment and a controlling one. Never having been exposed to approaches that are both more respectful and more effective in the long run, they may have taken on faith that extrinsic techniques are necessary for the students they work with, when in fact such approaches serve only to create a dependence on these very techniques.

"How'm I Doin'?"

Even before I had read the research, it was quite dear to me as a teacher, and before that as a student, that Ns and other artificial incentives for learning are no less techniques of control than harsher measures are. Eventually it also became clear that this fact helped explain their failure. But rewards reduce the prospects of effective learning for another reason, too: they lead students to concentrate on the question that stands as the title of this section.

The work of Carole Ames, Carol S. Dweck, and John Nicholls converges on a single crucial distinction concerning how to think about what happens in schools. Variouslly framed as "mastery versus ability., "learning versus performance,' and "task versus ego," the basic point is that there is an enormous difference between getting students to think about what they are doing, on the one hand, and about how well they are doing (and therefore how good they are at doing it), on the other. The latter orientation, in which rewards typically play a starring role, does a great deal of harm.

Students who are encouraged to think about what they are doing, assuming it is something worth doing, will likely come to find meaning in the processes involved in learning content, value mastery of the content itself, and exhibit pride in craftsmanship.... Their focus is on the processes involved in working with the content or performing the skill, and not on themselves, their abilities, how their progress will be perceived by others, or issues of success or failure or reward or punishment."

This is precisely what we want to promote--partly because a student who is caught up in what he is learning is more likely to be successful in learning it.

By contrast, students Jed to think mostly about how well they are doing--or even worse, how well they are doing compared to everyone else--are less likely to do well. This may seem paradoxical, but the fact is that students overly concerned about their performance come to see learning as a means to an end, the end being the good grade or other reward they will receive. They start to think that their performance, especially when they fail, is due to innate intelligence (or its absence): "I screwed up, therefore I'm stupid." That in turn leads them to assume there isn't much point in trying harder next time, which means they are unlikely to improve. It also leads them to try to avoid difficult tasks so they can escape a negative evaluation. After all, to think about your performance is to think less about what you are doing than about how you appear to others."

From this description and the research on which it is based, I think it is possible to tease out two distinct reasons that a performance orientation has unfortunate consequences. First, someone who is attending to how well he is doing has his self-concept on the line. His image of himself as smart or competent is endangered by the risk of failing to meet a certain standard of performance. The attempt to protect that image usually comes at the expense of a desire to try one's best, which can seem risky. If you don't try, you can't fail. Second, the more the student is focused on how well he's doing, the less he is absorbed in the task itself. That absorption facilitates learning, so anything that

undermines it is educationally disruptive.

This is not to say that when an assignment has been completed its worth cannot be judged. I have already discussed the value of informational feedback. There is a time to think about whether what one has done is any good, and it is usually necessary to talk with others about the quality of one's work. But the extent and frequency of these evaluations can easily be overdone for adults in the workplace, let alone for children in the classroom. The research is clear: getting children to focus on their performance can interfere with their ability to remember things about the challenging tasks they just worked on. It can undermine their ability to apply scientific principles to new situations." It can reduce the quality of their work as measured on tests of creativity" and their "readiness to contemplate diverse ideas."

The researchers who conduct such studies generally induce a performance orientation by what they say about the purpose of the experiment or by telling subjects what to think about. But what happens when they use traditional classroom techniques that focus students' attention on their performance--common practices such as giving grades for work or offering reminders that they'll be tested on what they're doing? The answer is that the effects are exactly the same: compared to students who are allowed to get wrapped up in the task itself, those thinking about grades or tests don't do as well on measures of creative thinking or conceptual learning. Even when they only have to learn things by rote, they are more apt to forget the material a week or so later.

I will have more to say later about the disadvantages of grades. My point for the time being is that students don't learn very effectively when adults hold out the promise of rewards, compare one child's performance to another's (leading them to think in terms of winning and losing rather than learning), or rely on any other practices that draw their attention to how well they are doing. Moreover, these strategies chip away at intrinsic motivation. When you tell students that how well they do on a task reveals how creative they are, or when you grade them, their interest in what they are doing declines.

In one intriguing experiment conducted by Israeli researcher Ruth Butler, some sixth-grade students were led to focus on how well they performed at a creative task (making pictures out of a page of preprinted circles) while others were just encouraged to be imaginative. Then each student was taken to a room that contained a pile of pictures supposedly drawn by other children in response to the same instructions. Each student also found information describing how to figure out his or her "creativity score" and compare it to those of the others. Sure enough, the children who were allowed to become immersed in the task were more interested in what their peers had done; those who were told to think about their performance now wanted to know *how* their peers had done relative to themselves. The famous "Wad-jaget?" preoccupation of students--compulsively comparing their own grades to others'--is not a function of human nature but of the performance orientation that suffuses most American classrooms and stifles children's interest in what they are learning.

Getting students to think about how they are performing also increases their fear of failure. Trying not to fail is, of course, very different from trying to succeed. One's efforts in the former case are geared at doing damage control, minimizing risks, getting by. In school, "the game is not to acquire knowledge but to discover what answer the teacher wants, and in what form she wants it." Surveys of elementary school students reveal that they have learned they are supposed to finish the assignment, do it quickly, and if possible, get the right answer. Much more rarely does a child think he is supposed to try to understand what he is working on. Students often say that "getting grades is the most important thing about school." And the more emphasis teachers and

parents place on performance, the more students are set back by failure. By contrast, those who are task oriented tend to be relatively resilient.

Now take this pattern one step further: someone who is concerned to minimize failure is unlikely to challenge herself. Not only rewards (see page 65) but anything that makes students preoccupied with how well they are doing will lead them to choose the easiest possible tasks: the point is to do well, not to learn. Apart from all the evidence demonstrating that this is true, all we have to do is wander onto a college campus and behold the Quest for the Perfect Gut--the search for the least demanding course. The rule of thumb is the more intense the focus on performance, the less the interest in intellectual challenge.

The performance focus makes things even more difficult for children who, for whatever reason, have stopped trying hard or who are especially anxious about how they will do--a finding that will probably not seem surprising. Less obvious, but no less true, is the fact that a performance orientation is also bad news for high achievers. In a study by Dweck and a colleague, these students too "passed up the opportunity to increase their skills on a task that entailed public mistakes" when encouraged to think about how well they could do it. Similarly, Butler has found that under such conditions--and particularly when grades are emphasized--top students are relatively uninterested in self-improvement or in the quality of the work they do."

Here, then, is another lens through which to look at those plodding overachievers of whom Bruner spoke. They watch their grade point averages with the eye of an emergency room technician monitoring a patient's blood pressure. Consequently, they are "less willing to take risks." In their fixation on extrinsic rewards, they often don't feel very good about themselves: some preliminary research suggests that there is actually a negative relation between the grades students make in high school and how positive they feel about themselves and the world a few years later. One educator concerned about gifted children remarks that "those students who are most excited by the educational possibilities before them are those we may be hurting most ... in the process of using extrinsic rewards."

Some teachers who realize this have moved away from rewards and a Stress on performance. But teachers operate within significant constraints: with their students' standardized test scores published in the newspapers and scrutinized as if they were a meaningful measure of learning. Teachers often feel obliged to get children obsessively concerned about how they are doing. These pressures on teachers must be eased in order for counterproductive practices in the classroom to stop.

One group of educational critics tells us, "Kids are failing to learn because we're afraid to let them know when they get something wrong for fear of injuring their self-esteem." The truth is that kids are *constantly* fearful of getting things wrong, which is why they do as little as they can get away with. Another group of critics tells us, "We need fewer punishments and more rewards; kids should be helped to stop fearing F's and to start thinking it's realistic to get A's," The truth is that the problem is not just punishments but also rewards, not bad grades but the emphasis on grading per se. Anything that gets children to think primarily about their performance will undermine their interest in learning, their desire to be challenged, and ultimately the extent of their achievement. Small wonder that rewards have precisely those effects.