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The Nature of Prescriptive Feedback (Part 1)

Carol S. Dweck, Ph.D. • October 2007

Topic: Encouraging Girls in Math and Science
Practice: Prescriptive Feedback

Highlights

- Stanford psychology professor Dr. Carol Dweck describes her research about student motivation and performance and its implications for encouraging girls in math and science.
- Students praised for their intelligence and ability did not want to take on challenging tasks and struggled when the difficulty of tasks increased. Students praised for working hard wanted more challenges and remained confident and interested (and performed better) as difficulty increased.
- Students praised for intelligence were much more likely to lie about their performance, indicating that the praise had emphasized the importance of being smart so much that the children struggled to admit to mistakes.
- Even the brightest girls often feel they have to be perfect all the time. Teachers should emphasize the academic process girls are engaged in, not the outcome or the girls' performance.

About the Interviewee

Carol S. Dweck, Ph.D., is a leading researcher in the field of motivation and is the Lewis and Virginia Eaton Professor of Psychology at Stanford. Her research has focused on why students succeed and how to foster their success. More specifically, her work has delineated the role of mindsets in students' motivation and has illuminated how praise for intelligence can undermine motivation and learning.

She has held professorships at Columbia and Harvard Universities, has lectured all over the world, and has been elected to the American Academy of Arts and Sciences. Her work has been prominently featured in such publications as *The New Yorker, Time, The New York Times, The Wall Street Journal, The Washington Post,* and *The Boston Globe,* and she has appeared on *Today, Good Morning America,* and *20/20.* Her recent book *Mindset* (published by Random House) has been widely acclaimed.

Full Transcript

My name is Carol Dweck. I'm professor of psychology at Stanford University. When teachers want to encourage girls in math and science, they should put the emphasis on the process that the girl's engaged in and not the outcome or the ability that the girl showed in her work.

There was a belief in the 90s that was generated by the self-esteem movement, that you should praise children's outcomes and their intelligence as much as you can. This would give them confidence and help them achieve. But I had been studying this process for many years, and I thought that that was problematic. The students who were most vulnerable were the ones who were already concerned—overly concerned—with their outcomes and ability. And so I thought, "Maybe this wasn't helpful."

We put it to the test in our research. We gave students difficult problems from a non-verbal I.Q. test. We praised half of the students for their intelligence, and we praised the other half for their effort—the process they engaged in. What we found was really dramatic. The students praised for their intelligence did not want to take on a challenging task. They wanted to make sure they kept succeeding and deserving that label. When we gave them some even more difficult problems, suddenly they lost confidence because if they were smart when they succeeded, they must not be smart if they didn't do well. They lost interest, and their performance crashed.

The students who were praised for effort wanted the challenging task. When they hit difficulty, remained confident, remained interested, and their performance increased from trial to trial.

In our experiments on praise, we brought students one at a time into a room. We gave them problems from a non-verbal I.Q. test. They were pattern completion problems that are a little like math and science. Half the students, after the first ten problems, were told, "Wow, that's a really good score. You must be smart at this." So they were told that they had high ability at the task. The other students were told after the same ten problems, "Wow, that's a really good score. You must have worked hard on this." And that is feedback

about effort, about process.

You wouldn't think one sentence of praise would make a huge difference, but it made a huge difference. It made such a huge difference that we did the study over five more times and found the same things each time. The praise for intelligence made students afraid of difficulty and it made them fall apart in the face of difficulty. The praise for effort and process made students eager for a challenge, and it allowed them to maintain their engagement and their effectiveness in the face of difficulty.

One more interesting thing happened. After the study was over, we asked students to anonymously report their scores. Almost 40 percent of the students who were praised for their intelligence lied. What does this mean? It means that praising children's intelligence makes being smart so important that they can't handle obstacles, they fall apart when they don't feel smart any more, and they lie about their score. They can't even admit to themselves, I think, that they messed up. Is that what we want in our students? That instead of going to fix a deficiency, they try to cover it up and run away from it? I don't think so.

But giving process feedback about the student's effort or strategy allowed them to confront their deficiency, try to remedy it, and to be very open about it. It was nothing shameful. That's what we want in our classroom, students who want challenge, can learn from mistakes, can tell you about what they don't understand and need to learn. And I think this is especially what girls need, because many girls—and especially even really bright girls—feel they have to be perfect all the time. So we want to create an environment in which hard tasks are desirable, mistakes are permitted, and correcting the mistakes are things that students know how to do.