DOINGWHATWORKS

Video
FULL DETAILS AND TRANSCRIPT

The Growth Mindset (Part 2)

Carol S. Dweck, Ph.D. • October 2007

Topic: Encouraging Girls in Math and Science
Practice: Ability is Expandable

Highlights

- If you believe that math abilities are something you can learn, you are more likely to feel that you can overcome any obstacles you encounter through effort.
- It is important for teachers to make students understand that tests only measure their current skill level—not their potential.
- Students react well to putting this issue in terms of how the brain works—that their brain forms new connections every time they struggle and work hard.

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

Many students believe that math ability is just fixed—you have it or you don't. And then there's a stereotype on top of that that says, "Oh, maybe boys have more of it, and girls have less of it." Girls are often afflicted by this stereotype, and a lot of them end up dropping out because they buy into this fixed idea that they don't have it.

When you have the fixed idea and you experience difficulty, get confused, get a poor grade on a test, you go, "Oh! I guess it means I don't have it. I better do something else." When you have a view that math abilities are something that you can learn, then when you hit difficulty or even failure, you say, "Well, I've got to learn in a different way. I've go to put more into this. I've got to work with the teacher. I've got to do more homework." You feel that you can overcome these obstacles because it's a skill you can acquire.

I think it's very important in this era of high stakes testing to teach students that the tests do not tell them about their underlying intelligence or abilities. The tests just tell them about their current skills in that testing situation. And that those tests do not tell them about their potential to learn in the future.

Often, students—even very bright students—will get a disappointing test score and become discouraged about themselves. And actually their grades will go down as a result of a disappointing score on a standardized test. They must know that that test is not measuring their ability or their potential, only their current skill level in that testing situation.

When students are struggling with math and science, teachers can give them more of a growth mindset, can teach them that the brain forms new connections every time they struggle and work hard, their math and science neurons are connecting up, and they are improving their abilities. Students are very compelled when the material is put in terms of the brain and how it works.

Also, teachers need to tell students the truth about where they are and not just flatter the students who are behind or struggling and, you know, leave them behind and struggling and just try to make them feel good. Because when students know that they're behind and teachers tell them, "You've got to work harder than other people right now to make those connections," they're willing to do it. Students who have a fixed mindset—who think their intelligence is just fixed—don't, as a group, believe in effort. They think if you have ability, you don't need effort. And if you have to apply effort, it means you don't have ability.

I think this is the worst belief anyone can have whether it's a student or a grown up, because everything worthwhile in life—not just math and science, but also math and science—requires a lot of effort over a long period of time to be really successful. If our brightest students are learning that being smart is about coasting along and doing well on no effort, they're not going to be our brightest students in the long run.

Teachers often, themselves, have a stereotype of which children are good in math and which aren't: girls—it's not their subject, boys—it is their subject, and they may be conveying this to kids in math and science. Instead, teachers need to use the vocabulary of growing your brain, of working hard and forming new connections. They have to stay away from the language of ability and talent or gift. These are terms that put a label on kids and that freeze them—f-r-e-e-z-e, freezes them where they are.

They have to talk the language of effort and studying and surmounting obstacles and learning from mistakes, and above all, growing new connections in math that will not convey stereotypes to students.