

Mindset matters

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Mindset matters

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Editor's note: John Cato has been teaching students in AP® Physics and Gifted Physics at Lakeside High School for 12 years. He has a BS in physics from Augusta State University and an MS in applied computer science from Columbus State University. His interests include reading, learning, and everything stock market!

We all love those students who just refuse to quit. At sometime during their lives, they adopted a philosophy that they were going to do the best they could, and they recognized that accomplishing their dreams was simply a matter of doing the necessary work in order to be successful. But we also have had those students who didn't even seem to try, and there was very little we could do to get them going. They coasted along, made poor grades, and always seemed to indicate that they weren't going to try. They were "smart," they never needed to study, and they certainly weren't about to start now no matter what was said to them. Better yet, their struggles weren't their fault, but rather due to "bad teaching." I thought that was just the way it was going to be.

Now, however, after reading Carol Dweck's book *Mindset*, I finally understand why. As a teacher, I have always looked at a new class of students on the first day of school as a blank slate, with each student equally prepared and ready to learn should he or she choose to do the necessary work. But that is *not* how each student sees the situation on the first day of class! According to Dweck, there exist two types of mindsets: a fixed mindset and a growth mindset. Some of my students have a fixed mindset. Those students see things from these perspectives: "I am the smartest person in here," "I have never needed to study so what is he talking about studying," or "I am not smart enough to do this," "Physics is too hard," etc. Then, there are the growth-mindset students: "I can do it," "I will work until I am successful," "It may be hard, but I will keep working until I get it," etc. Understanding these two mindsets and how they play out in the classroom has had a profound impact in my classroom achievement.

In the past, I held the mindset that some kids were good at physics or some were interested in physics while others did not have the maturity yet to do physics. Now I have a better understanding of the role that mindset has on students' performance. The fixed-mindset students struggled and simply quit trying. They seemingly loved the class, and enjoyed the material and the teacher, but would struggle when things became difficult and would give up. I would hear such statements as, "I just can't do this. This is too hard. No matter what I do, I just don't get it." Quite simply, many of my fixed-mindset students quit trying when it was obvious to them they could not sit in class and produce without doing work. After all, smart people don't have to work. It should be easy for them.

I began to look for ways to identify and change the fixed mindsets of my students. In conversations with students, I threw away phrases such as "Physics is hard" and "You're good at physics" and replaced them with "Physics is work. Anyone can work hard" and "You're working hard at physics. That's what matters. It is how you work at physics that counts, not how 'good' you are right now. Work hard and you'll get better. That is the goal." I also tried to educate them about the characteristics of the mindsets and the influence they have on performance. How could I really expect change if they were not aware of two mindsets in the first place?

After a year of focused mindset education and awareness in my classroom, I have two examples that I think illustrate the impact of the power of this approach. One of my students, A, was definitely a fixed-mindset person. He *never* did his work, did poorly on tests and quizzes, and never took notes. And yet he was scoring 3/4 on the practice AP tests. He said that was fine with him. By the end of the year, he acknowledged that he did have a fixed mindset and that he fell back on the "I'm smart and I just didn't try" line because he could not accept that others could do something he couldn't. He resolved to take the steps to be more growth minded after he realized that he had never applied himself because he was always afraid he would fail. It was easier just not trying.

Then, there was student Z. If you went by test scores, he was terrible. On the first test of the year, he got 9 out of 35 right. But when he got his test back, his attitude was, "I don't get it yet. I gotta keep working on this." In the spring, he was trying to decide if he should take the AP tests (both mechanics and E&M). I was thinking, "Man, he is really going to bomb them" when I realized my mindset was causing me to think he wasn't talented enough to understand physics. After a poor performance on the first practice test, he resolved to "keep working at it." Week after week, pieces began to fall into place, and by the time the AP tests arrived, he was scoring higher than his friends. I asked him when he knew he had it, and he said he just kept working at it and things started to click. He said he knew he would get it if he kept working at it. He just didn't know if it would happen before the AP tests. What a great mindset!

Understanding these two mindsets has opened a pathway to better teaching for me. I have a much better understanding of what the mindsets of my students are as they come into my classroom and the impact that can have on their effort over the 180 days. I can now have open and honest dialogue from the beginning of the class to better serve my students who have that fixed mindset. Labels such as "You're smart" or "You're bad at math" have been detrimental to the fixed-mindset students. That mindset may prevent students from giving their best effort by giving them an excuse for poor performance. At the heart of education, we must understand how our students think if we are truly going to teach them, and therefore we cannot underestimate the power of their mindsets.