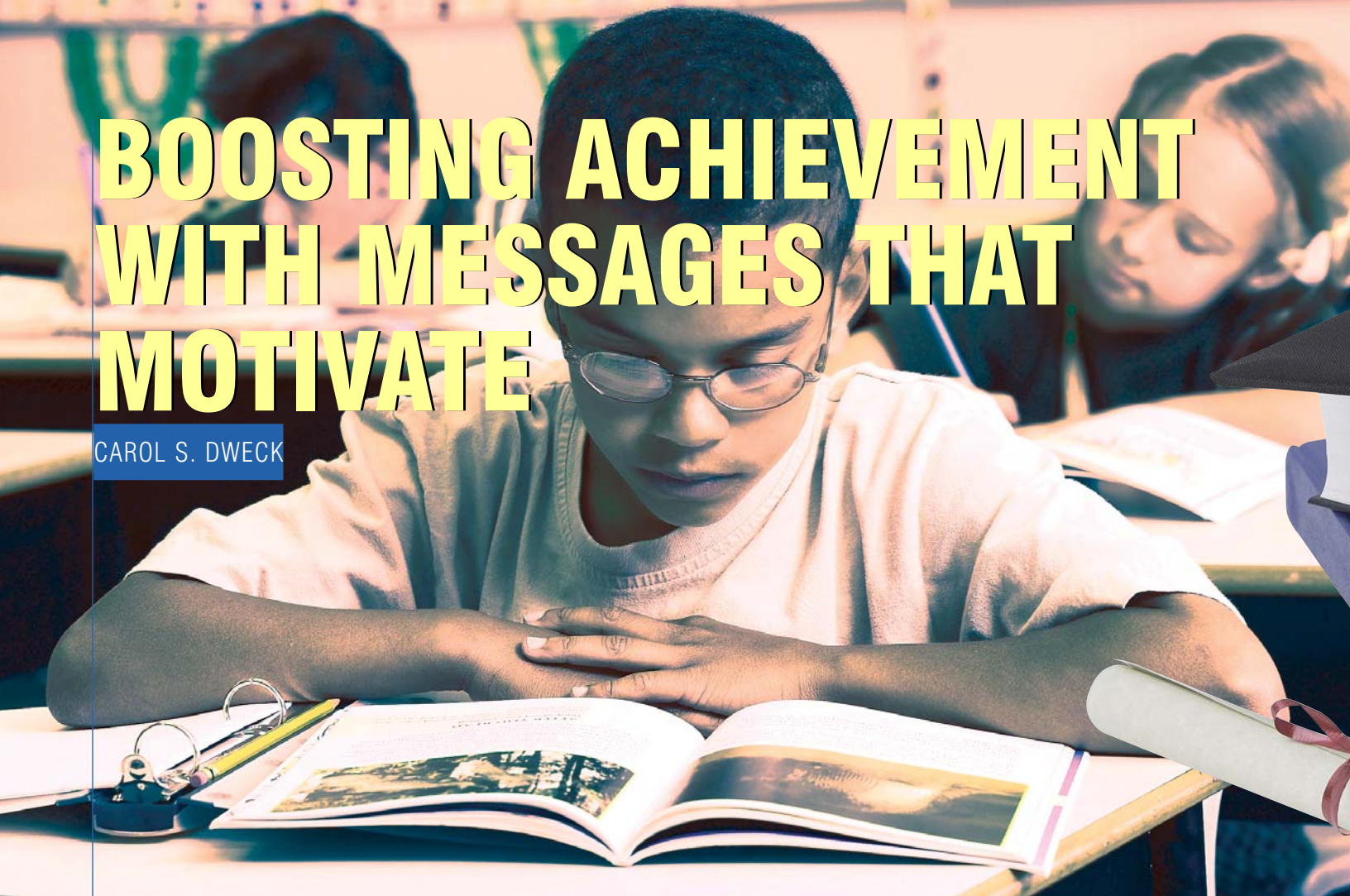




BOOSTING ACHIEVEMENT WITH MESSAGES THAT MOTIVATE

CAROL S. DWECK

AS EDUCATORS, ALMOST EVERYTHING WE SAY TO OUR students sends a message. Some messages enhance students' motivation, but other messages undermine it. How can we know which is which? Common sense and intuition will always be a part of good teaching, but they are not always trustworthy guides. This is where research comes in, and helps us put our common sense to the test.

Imagine a brilliant student who enters a new school and suddenly starts getting poor grades. Or a struggling student who needs encouragement. Or a talented child who lacks confidence. What should teachers say to these students to send messages that motivate? In each case, teachers might be tempted to look for opportunities to praise the students' abilities and assure them of their intelligence. In a survey we gave to parents, over 80% of them thought that it was *necessary* to praise their children's intelligence in order to give them confidence in their abilities and motivate them to succeed.

Our research shows that this is wrong. As you read on, you will find out why.

WHO ARE THE MOTIVATED CHILDREN?

For over 30 years, I have studied students' motivation in order to find out what makes motivated students tick. Here is the most important thing I have learned: The most motivated and resilient students are *not* the ones who think they have a lot of fixed or innate intelligence. Instead, the most motivated and resilient students are the ones who believe that their abilities can be developed through their effort and learning.

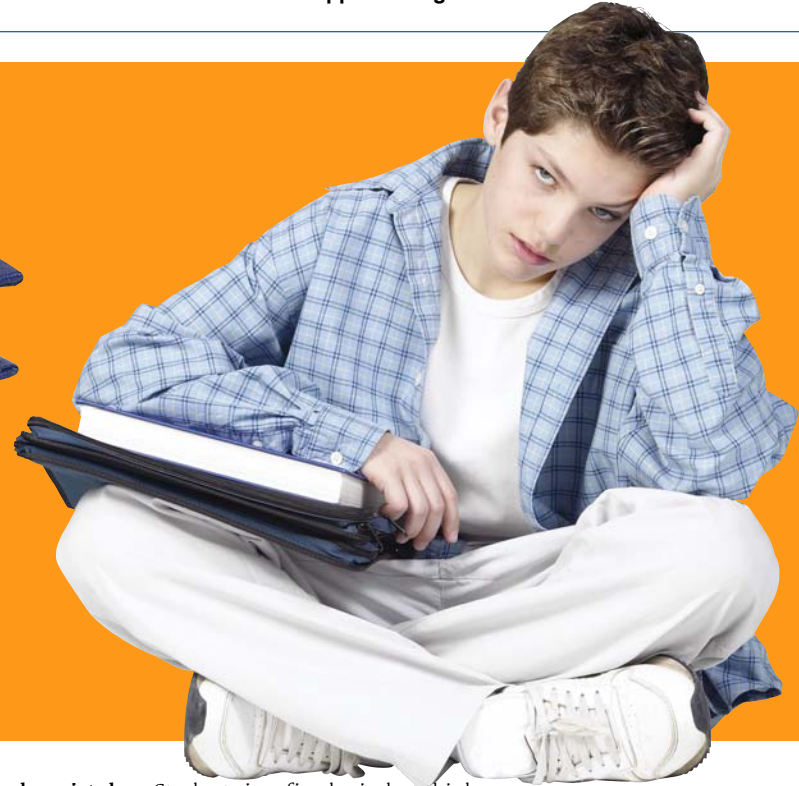
Is intelligence something inherent or is it something that can be developed? Although this is not really an either/or question, more and more research is revealing that important parts of intelligence can be developed and that the brain has greater potential for growth and change throughout life than anyone ever thought. It's also interesting to know that Alfred Binet, the man who invented the IQ test, profoundly believed that children's intelligence could be transformed and enhanced through education. In fact, he devoted most of his career to developing educational curricula that would do just that. (The IQ test was simply created to identify children who were not profiting from the curriculum in the Paris public schools, so that Binet could develop courses of study that would better meet their needs.)

My main point will be: It matters greatly what students believe about their intelligence.

In a recently-published study, my colleagues (Lisa Blackwell and Kali Trzeniewski) and I followed over 400 students across the transition to seventh grade, a time when many students are derailed. At this time, the work gets harder, the grading becomes more stringent, and the environment becomes less personalized and nurturing. Students, as a whole, show a concomitant decline in motivation and grades. However, this was not equally true for all students in our study.

It was the students who believed in fixed intelligence who fared most poorly across this transition – even many who had done well in the past. They showed poorer motivation, less resilience in the face of difficulty, and lower

EN BREF Bien qu'il soit logique de penser que les élèves non motivés, en difficulté ou peu sûrs d'eux pourraient bénéficier d'éloges au sujet de leur intelligence, la recherche le contredit. Les élèves qui croient que leur succès est attribuable à leur intelligence réussissent moins que ceux qui croient qu'ils doivent investir des efforts pour réussir. Les élèves ayant l'attitude ancrée que leur intelligence est à la source de leur rendement adoptent des stratégies pour avoir l'air intelligent – même s'ils apprennent alors moins. Par contre, les élèves animés d'une attitude « de croissance » croient qu'ils peuvent développer leurs habiletés et adoptent des stratégies rehaussant leurs habitudes de travail et accroissant leurs apprentissages.



grades over the next two years. Those who believed their intelligence could be developed showed *increasing grades* over the same period. How did this happen?

THE FIXED MINDSET

Let's look first at the students who believed in fixed intelligence and see how this fixed mindset worked to limit their achievement. The fixed mindset comes with "rules," the cardinal rule being: *Look smart at all costs*. Not surprisingly, this rule stands in the way of learning.

For example, when our seventh graders were given a choice between learning something new and doing a task that would make them look smart, they chose the latter. In another study, we polled new students at the University of Hong Kong, an elite university where all classes are in English. We asked students who had poor English skills whether they would take a remedial English course if the faculty offered it. Students with a fixed mindset were not enthusiastic – they didn't want to be in a situation where they would not look smart. Better to put their college career in jeopardy! (Students with a *growth mindset* – who believed their intelligence could be developed – were far more enthusiastic about the course.)

Of course, wanting to look smart can sometimes be motivating, but the fixed mindset often comes with three more rules.

1. Don't make mistakes. Students in a fixed mindset think that mistakes or setbacks mean they lack ability. Our seventh graders told us that if they got one poor grade in a new course, it would mean they weren't good at that subject. They went on to say that they would try to drop the course and never take that subject again. In a study with pre-med college students at Columbia University we found the same thing. Students in a fixed mindset thought one disappointing grade measured their ability and their performance never recovered.

In short, students in a fixed mindset believe that if they had the intelligence, it would carry them straight through to perfect performance. Anything less spells inadequacy. This is why many talented students lack confidence in themselves. Which brings us to the next rule.

2. Don't work hard. Our seventh graders in a fixed mindset thought that hard work signaled low intelligence: "To tell the truth, when I work hard at my schoolwork it makes me feel like I'm not very smart." It didn't matter whether the schoolwork was new or difficult; their effort was a sign of limited ability.

THE IDEA THAT HIGH EFFORT EQUALS LOW ABILITY IS ONE OF THE WORST BELIEFS STUDENTS CAN HAVE. IT IS VIRTUALLY IMPOSSIBLE TO DO ANYTHING WORTHWHILE WITHOUT SUSTAINED EFFORT.

This is precisely why many “gifted” students simply stop working when school becomes more difficult. Before, they’d been able to coast along and do extremely well. In a fixed mindset, that’s how they knew they were gifted. Suddenly, they can’t do that anymore. Now they have a choice: work hard and feel dumb (and worst of all maybe still not do spectacularly) or don’t work hard and act smart. Act as though you could do well if you wanted to. You just don’t care to.

The idea that high effort equals low ability is one of the worst beliefs students can have. It is virtually impossible to do anything worthwhile without sustained effort. This is why we should not tell students how great they are when they do something quickly and easily. They should not think that low effort is the hallmark of intelligence.

3. If you make mistakes, don’t try to repair them. Our seventh graders with a fixed mindset told us that if they did poorly on a test, they would study less the next time and seriously consider cheating. Hardly a recipe for success! Actually, the fixed mindset does not provide good recipes for recovering from setbacks. Setbacks indicate a lack of ability and, in the fixed mindset, that lack of ability is permanent.

In one study, we monitored students’ brain waves (EEGs) as they performed a very difficult task. What were students paying most attention to? The brain waves revealed that students in a fixed mindset were vitally interested in whether they got an answer right or wrong, but, when they were wrong, they paid little attention to what the right answer was. They were not trying to correct their errors and, as a result, did significantly worse than students with a growth mindset when they were later retested on the material.

I think we can begin to understand how a fixed mindset can limit students’ learning. Look smart at all costs. Don’t make mistakes. Don’t work hard. If you make mistakes, don’t try to correct them. Clearly, these are not rules that foster intellectual growth.

THE GROWTH MINDSET

Students with a growth mindset believe that their abilities can be developed, and so their major goal is to learn. “It’s much more important for me to learn things in my classes than it is to get the best grades.” Although these students care very much about doing well in school, they put a premium on learning. Ironically, this leads them to earn higher grades.

In other words, the cardinal rule of the growth mindset is: Learn! And like the fixed mindset, the growth mindset comes with three more rules that help students reach their goal.

1. Take on challenges. We’ve often offered students a choice between a challenging task that they can learn from and a task that is sure to make them look smart. Students in a growth mindset do not want to waste their time looking smart on tasks that offer them nothing else. They overwhelmingly want tasks that stretch their abilities and teach them new things.

2. Work hard. Rather than thinking that effort undermines ability, our seventh graders with a growth mindset believed that effort enhanced ability: “The harder you work at something, the better you’ll be at it.” They did not believe that inherent ability was the royal road to success, for even geniuses, they correctly believed, had to work hard for their successes.

3. Confront your deficiencies and correct them. In just about every study we’ve done, students in a growth mindset are eager to remedy their deficiencies. They may be very disappointed by a poor performance, but they deal with it directly. Our seventh graders with a growth mindset, after a poor grade on a test, told us that they would study harder and try different study strategies next time. Our premed college students with a growth mindset recovered from an initially disappointing grade through their deeper and more extensive study strategies. Our University of Hong Kong freshmen wanted the remedial English course to shore up their language skills. And the growth-mindset students in our EEG experiment confronted their mistakes and sought new knowledge to rectify them.

Clearly these are rules and practices that promote intellectual growth. What can educators do to foster a growth mindset in their students?

MINDSET MESSAGES: PRAISE

To answer this question, let’s return to the issue of praise and the message it sends. Although common sense may suggest that students who are unmotivated, struggling, or lacking in confidence might benefit from praise for their intelligence, we worried that this kind of praise might send a fixed mindset message. We worried that praising students’ intelligence, even after a job well done, might tell them: 1) I can look at your performance and judge your underlying intelligence (a fixed mindset message) and 2) I care first and foremost about your underlying intelligence and that’s what I value you for (a fixed mindset message). In short, we worried that praise for intelligence would put students in a fixed mindset with all of its vulnerabilities.

When we thought about the children with a growth mindset, we thought about their focus on effort and strategies, and how this focus on process allowed them to remain motivated and effective in the face of setbacks. So we wondered whether praise for effort or strategies would promote a growth mindset with its motivation and resilience.

We then conducted research to test these ideas. We studied fifth graders and kindergarteners. We studied children in inner city schools, suburban schools, and rural schools. And we found the same thing in each case.

After students received intelligence praise, they adopted a fixed mindset. They rejected a challenging task they could learn from, instead selecting the task that would make



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SOMETHING VALUABLE. BUT OUR FINDINGS TOLD A DIFFERENT STORY.

them look smart. When they hit difficulty and made errors, they lost confidence in their ability – now they thought they were not smart – and ended up performing poorly.

Students who were praised for their effort entered a growth mindset. They wanted the challenge, they maintained their confidence and enjoyment in the face of difficulty, and they ended up performing far better, even when the task was an IQ test.

There was one more intriguing finding. Students who were praised for their intelligence later lied about their scores. This means that errors were so humiliating that they could not own up to them.

Make no mistake – children loved the intelligence praise. They smiled broadly and seemed proud of themselves. It really made the testers feel as though they had given the children something valuable. But our findings told a different story. It was praising the student's process – which could be their effort, strategies, concentration, choices, persistence – that helped them remain motivated, confident, and effective. (For ideas about ways to deliver process praise, see my book *Mindset*.)

Can a growth mindset be taught directly?

GROWTH MINDSET PROGRAMS

BOOST ACHIEVEMENT

Three recent studies (by Joshua Aronson, by Catherine Good, and by my group) have shown that teaching students a growth mindset results in increased motivation, better grades, and higher achievement test scores. Over a series of sessions, students were taught that their brains form new connections every time they learn, and that over time they can become smarter. Students were very excited by the idea that they could influence their brains. They were also shown how to apply this idea to their schoolwork. Whether the students were in junior high school or at an elite university, those who received this message outperformed students in the control groups (even when the students in the control groups received excellent training in study skills). They also reported a greater investment in learning, and teachers reported noticeable changes in these students' desire to work hard and learn.

These benefits were especially important for students who are subject to negative stereotypes – girls in math or African-American students. The effects of stereotypes were reduced when students believed that their abilities could be developed. For example, in one study the gender gap in math was greatly reduced when girls were taught the growth mindset.

CONCLUSION

Many teachers see evidence for a fixed mindset every year. The students who start out at the top of their class end up at the top, and the students who start out at the bottom end up there. Research by Falko Rheinberg shows that when teachers believe in fixed intelligence, this is exactly what happens. It is a self-fulfilling prophecy. However,

when teachers hold a growth mindset, many students who start out lower in the class blossom during the year and join the higher achievers.

As educators, we want all of the students we teach to profit from our efforts. A growth mindset – ours and theirs – helps students to seek learning, to love learning, and to learn effectively. |

Measuring Students' Mindsets (for students 10 and older)

Read each sentence below and then circle the one number that shows how much you agree with it. There are no right or wrong answers.

1 You have a certain amount of intelligence, and you really can't do much to change it.*

Strongly Agree 1 Agree 2 Mostly Agree 3
Mostly Disagree 4 Disagree 5 Strongly Disagree 6

2 Your intelligence is something about you that you can't change very much.*

Strongly Agree 1 Agree 2 Mostly Agree 3
Mostly Disagree 4 Disagree 5 Strongly Disagree 6

3 You can learn new things, but you can't really change your basic intelligence.*

Strongly Agree 1 Agree 2 Mostly Agree 3
Mostly Disagree 4 Disagree 5 Strongly Disagree 6

4 No matter who you are, you can change your intelligence a lot.

Strongly Agree 1 Agree 2 Mostly Agree 3
Mostly Disagree 4 Disagree 5 Strongly Disagree 6

5 You can always greatly change how intelligent you are.

Strongly Agree 1 Agree 2 Mostly Agree 3
Mostly Disagree 4 Disagree 5 Strongly Disagree 6

6 No matter how much intelligence you have, you can always change it quite a bit.

Strongly Agree 1 Agree 2 Mostly Agree 3
Mostly Disagree 4 Disagree 5 Strongly Disagree 6

*These three fixed-mindset items can be used alone.

CAROL S. DWECK is the Lewis and Virginia Eaton Professor of Psychology at Stanford University and the author of *Mindset: The New Psychology of Success*, recently published by Random House. She is a leading researcher in the area of student motivation, having received numerous grants and awards for her work. Her research has also been featured in *Time* magazine, *New York* magazine, the *New York Times*, the *Boston Globe*, the *Washington Post*, the *Manchester Guardian*, and on 20/20, the Today show, and the BBC.

A list of readings related to this article is available on the CEA website at www.cea-ace.ca

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