# Three Learning Mindsets Research Brief

*There is a lot of literature out there on learning mindsets, and each paper, it seems, has a different idea of which mindsets are the most important for students. But from our experience here at Eskolta, we think that we can boil most of them down to three major mindsets: growth mindset, value for learning, and sense of belonging. The following summaries describe seminal research studies about interventions that have been shown to influence students’ learning mindsets.*

# Growth Mindset

*“My ability grows with my effort and good strategies.”*

Claudia Mueller and [Carol Dweck](http://www.ascd.org/publications/educational-leadership/oct07/vol65/num02/The-Perils-and-Promises-of-Praise.aspx) has studied the effect of small statements of praise on how students approach a challenge. Dweck and her colleagues gave fifth-graders an easy set of math puzzles, which everyone performed well on. To half of the students, they praised intelligence with comments such as “You must be smart at this.” To the other half, they praised effort, with comments such as “You must have worked hard at this.” Then they offered students a choice for their next set of problems: they were told they could either get easy ones again, which they would likely do well on but might not learn as much from, or difficult ones that they might not do well on but which they would learn a lot from. More than 90 percent of the students who had been praised for effort chose the difficult problems (compared to 40 percent of the group praised for intelligence). Then they gave all students a difficult set of problems, which everyone failed. The effort-praise students were more likely to rebound after this failure, try again, and learn from their mistakes, performing much better when given a second round of easy puzzles. However, the intelligence-praise students were more likely to lie about their performance, and did much worse when given the second round of easy puzzles. They were less resilient to failure.

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# Value for Learning

*“I see learning as meaningful and connected to my life and goals.”*

One study by [Chris Hulleman and Judith M. Harackiewicz](https://psych.wisc.edu/cmsdocuments/HullemanH09Science.pdf) studied ninth-graders in science classes. In a randomized field experiment, they investigated whether, over the course of a semester, students who wrote about how the class material was personally relevant to them would increase their course grades and interest in science. Students were divided into two randomly selected groups, and every three to four weeks half of them were tasked with writing summaries of the material while the other half were prompted to write about how the information would be useful to them or a friend/relative in their daily life or future. The researchers found that just prompting the students to think about relevance managed to close the achievement gap between minority and white students by 40 percent. Another study had the same sort of reflection sessions but also asked students to self-rate their science abilities. Again, what they saw was that the reflections closed the achievement gap, not just in ability but also in self-esteem.

# Sense of Belonging

*“I belong in an academic community.”*

A study by [Claude Steele](http://users.nber.org/~sewp/events/2005.01.14/Bios%2BLinks/Good-rec2-Steele_%26_Aronson_95.pdf) and Joshua Anderson analyzed stereotype threat. If a student identifies with a group stigmatized by factors like race or gender, they may believe that they are limited, that they are not capable of doing certain things. Even if students don’t believe the stereotype themselves, anxiety about confirming those negative stereotypes to others has been shown to bring down test scores. In Steele’s study, they gave two different groups of students the same test but with different instructions. One was told: “This is a test of your verbal abilities.” The other was told: “We’re trying to understand the factors involved in solving verbal problems.” What they found was that in the first group, there was a significant racial achievement gap—that black students performed worse than white students. In the second group, however, that gap was erased. Just reframing the test was enough to basically remove the effects of stereotype threat.



A study by [David Yeager](https://www.apa.org/pubs/journals/releases/xge-a0033906.pdf) looked at how students responded to feedback on essays. Some students got standard comments back, such as “I’m giving you these comments so that you’ll have feedback on your paper.” Some students received feedback that said, “I am giving you these comments because I have high expectations of you, and I know you can reach them.” When it came time to turn in revisions, the first group saw a racial gap in returns, the second group saw basically none.