

Claudia J. Stanny

Director, Center for University Teaching, Learning, and Assessment

The beliefs instructors and students have about the nature of ability can have important consequences for the teaching strategies they adopt and their motivation to engage in effort to learn new skills. Carol Dweck (2006) describes a *fixed ability mindset* as the belief that ability (such as *talent* or *intelligence*) is a static, enduring characteristic of individuals. The *fixed ability mindset* assumes that abilities can be assessed, but little can be done to change abilities. In contrast, the *growth* or *developing ability mindset* is the belief that ability at any given point in time is subject to change and improvement. The *growth mindset* assumes that abilities develop and improve when a person engages in appropriate learning activities, receives effective formative feedback, and makes an effort to learn from these experiences.

What are the implications of these mindsets for teaching and learning?

Individuals dominated by a *fixed mindset* believe that evaluation of ability and selection based on ability are important components of the educational process. Teachers with a fixed mindset might believe that their role as a teacher is to identify talented students and encourage them to pursue advanced work in the discipline and encourage less talented students to consider other alternatives that are better suited to their existing abilities. Students with a fixed mindset might believe that a major goal of their education is to identify those disciplines in which their skills allow them to excel and avoid disciplines in which they have limited ability. A student with a fixed mindset might believe that effort expended toward trying to learn skills in a discipline in which they are weak is a futile battle with inadequate talent. These students tend to regard their performance as an indicator of their (unchangeable) ability. They interpret weak

performance as a sign that they lack ability and should give up. Students with a fixed mindset may have difficulty getting motivated to expend much effort toward learning skills. Either you've *got it* or you don't. Dweck notes that individuals with a fixed mindset often regard individuals who expend significant effort to achieve high levels of performance as "overachievers" who substitute effort for "real" talent.

In contrast, individuals dominated by a *growth mindset* regard abilities as a product of an individual's background, experiences, effort expended toward acquiring new skills, access to skilled coaches and mentors, and identification of effective strategies for learning. They regard ability as a fluid characteristic that can be altered with the right kinds of experience and adequate effort expended toward improving performance. Teachers with a growth mindset might believe that their role as a teacher is to identify and provide the kinds of experiences, learning strategies, and feedback students need to improve their skill. These teachers recognize that students might differ in terms which interventions will contribute most to skill improvement and suggest strategies that reflect the student's current level of skill and the goals that motivate the student to exert effort toward developing skill. But these teachers believe that all students are capable of improving aspects of their performance. Students with a growth mindset might believe that their performance is determined primarily by the quality of effort they expend and the appropriateness of the strategies they use to learn. They interpret weak performance as a sign that they did not exert enough effort or used an inappropriate approach to the work. They seek feedback that will identify alternative approaches that will enable them to perform better in the future.

Developing expertise in students

The growth mindset is consistent with Ericsson's work on the development of expertise (Ericsson & Charness, 1994; Ericsson, Krampe, & Tesch-Romer, 1993). Ericsson argues that expertise is not an automatic consequence of experience or time spent working in a field. Instead, expertise emerges following extended periods in which the individual engages in deliberate practice to improve the quality of performance. Deliberate practice differs on a variety of dimensions from mere repetition or time spent performing a skill. The learner must be motivated to attend to the practice tasks and exert effort to improve. The teacher or coach must provide effective feedback and create learning activities that engage students in progressively more challenging tasks as skill improves. Deliberate practice focuses the learner's attention on areas of weakness and directs effort toward the development of new skills and strategies that improve performance. Tasks selected for deliberate practice are determined by the learner's current level of knowledge and skill and must be designed to appropriately challenge the learner. In contrast, during other types of practice, the learner merely engages in activities that depend on skills the learner has already mastered. Deliberate practice creates challenges and demands acquisition of new skill whereas routine practice merely maintains existing levels of performance.

Although this essay depicts the fixed and growth mindsets as discrete dichotomies, Dweck proposes that individuals are inconsistent in their adherence to either belief. An individual might hold a growth mindset about language acquisition and a fixed mindset about artistic talent or personality traits. More importantly, Dweck argues that people can learn to apply either mindset toward their learning and ability in a given domain.

Implications of mindsets for feedback on student work

If a teacher can encourage students to adopt one mindset instead of another, which mindset would lead to more productive learning experiences? Given that students who adopt a growth mindset are more strongly motivated to seek and use formative feedback and exert effort toward developing new skills, a growth mindset appears to be more effective in promoting new learning. Dweck discusses the types of feedback that encourage adoption of either a fixed mindset or a growth mindset. Students need feedback that will accurately calibrate their evaluation of the quality of their work. However, feedback that focuses entirely on the evaluation of existing skill encourages a fixed mindset. In contrast, feedback that also includes an evaluation of the effort the student expended and provides explicit information about additional strategies that could improve future efforts encourages a growth mindset. Should students be encouraged to select "safe" projects that they can confidently perform without error? Should students be encouraged to take a risk on a project that will stretch their skill but might not work out as planned? Evaluation of student work that includes a feedback element that reflects these decisions as well as overall quality of the learning manifested in the work produced encourages students to adopt a growth mindset.

References

- Dweck, C. S. (2006). *Mindset: The new psychology of success*. New York: Ballantine Books.
- Ericsson, K. A., & Charness, N. (1994). Expert performance: Its structure and acquisition. *American Psychologist, 49*, 725-747. doi: 10.1037/0003-066X.49.8.725
- Ericsson, K. A., Krampe, R. T., & Tesch-Romer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review, 100*, 363-406. doi: 10.1037/0033-295X.100.3.363

