
Week 6

# Structural Factors, Growth Mindset

DSC 95, Spring 2025 at UC San Diego

# Agenda

- Structural factors.
- Growth mindset.

**Announcements:**

- This week's homework:
  - Video.
  - Reading.
  - Implicit association test.
  - Everything is linked from the Gradescope assignment.

# Structural factors

# Case study: *Who Gets to Graduate?*

This week, one of your required readings is the NYT article *Who Gets to Graduate*, which chronicles the story of Vanessa Brewer, a student from a low-income household who enrolled at UT Austin.

It’s long, but worth reading. Let’s look at some excerpts.

*“When you look at the national statistics on college graduation rates, there are two big trends that stand out right away. The first is that there are a whole lot of students who make it to college — who show up on campus and enroll in classes — but never get their degrees.* ***More than 40 percent of American students who start at four-year colleges haven’t earned a degree after six years. If you include community-college students in the tabulation, the dropout rate is more than half, worse than any other country except Hungary.***”

*“The second trend is that whether a student graduates or not seems to depend today almost entirely on just one factor — how much money his or her parents make. To put it in blunt terms:* ***Rich kids graduate; poor and working-class kids don’t.*** *Or to put it more statistically:* ***About a quarter of college freshmen born into the bottom half of the income distribution will manage to collect a bachelor’s degree by age 24, while almost 90 percent of freshmen born into families in the top income quartile will go on to finish their degree.***”

*“When you read about those gaps, you might assume that they mostly have to do with ability.* ***Rich kids do better on the SAT, so of course they do better in college. But ability turns out to be a relatively minor factor behind this divide.*** *If you compare college students with the same standardized-test scores who come from different family backgrounds, you find that their educational outcomes reflect their parents’ income, not their test scores.* ***Take students like Vanessa, who do moderately well on standardized tests — scoring between 1,000 and 1,200 out of 1,600 on the SAT. If those students come from families in the top-income quartile, they have a 2 in 3 chance of graduating with a four-year degree. If they come from families in the bottom quartile, they have just a 1 in 6 chance of making it to graduation.***”

*“The good news for Vanessa is that she had improved her odds by enrolling in a highly selective college. Many low-income students “undermatch,” meaning that they don’t attend — or even apply to — the most selective college that would accept them. It may seem counterintuitive, but the more selective the college you choose, the higher your likelihood of graduating.* ***But even among the highly educated students of U.T., parental income and education play a huge role in determining who will graduate on time. An internal U.T. report published in 2012 showed that only 39 percent of first-generation students (meaning students whose parents weren’t college graduates) graduated in four years, compared with 60 percent whose parents both graduated from college.*** *So Vanessa was caught in something of a paradox. According to her academic record, she had all the ability she needed to succeed at an elite college; according to the demographic statistics, she was at serious risk of failing.”*

*“The Institutional Research team analyzed the performance of tens of thousands of recent U.T. students,* ***and from that analysis they produced a tool they called the Dashboard — an algorithm, in spreadsheet form, that would consider 14 variables, from an incoming student’s family income to his SAT score to his class rank to his parents’ educational background****, and then immediately spit out a probability, to the second decimal place, of how likely he was to graduate in four years.”*

# Possible variables used in “the Dashboard”

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# Prior experience

Why are most American professional baseball players born from August through October?

| Birth Month | American Major Leaguers | Foreign-Born Major Leaguers |
|---|---|---|
| January | 387 | 101 |
| February | 329 | 82 |
| March | 366 | 85 |
| April | 344 | 82 |
| May | 336 | 94 |
| June | 313 | 83 |
| July | 313 | 59 |
| **August** | **503** | 91 |
| September | 421 | 70 |
| October | 434 | 100 |
| November | 398 | 103 |
| December | 371 | 82 |

The Boys of Late Summer: Why do so many pro baseball players have August birthdays?

# Prior experience

Excerpts from the article:

- *“The magical date of Aug. 1 gives a strong hint as to the explanation for this phenomenon. For more than 55 years, July 31 has been the age-cutoff date used by virtually all nonschool-affiliated baseball leagues in the United States.”*
- *“Twelve full months of development makes a huge difference for an 11- or 12-year-old.”*
- *“The player who is 12 months older will, on average, be bigger, stronger, and more coordinated than his younger counterpart, not to mention more experienced.”*
- *“And those bigger, better players are the ones given opportunities for further advancement.”*

# Stereotype threat

From Wikipedia:

> *"Stereotype threat is a situational predicament in which people are or* ***feel themselves to be at risk of conforming to stereotypes about their social group****. It is theorized to be a contributing factor to long-standing racial and gender gaps in academic performance."*

# Stereotype threat

Consider this excerpt from the abstract of this paper by Spencer, Steele, and Quinn:

> *"When women perform math, unlike men, they risk being judged by the negative stereotype that women have weaker math ability... **In Study 2 we demonstrated that this difference in performance could be eliminated when we lowered stereotype threat by describing the test as not producing gender differences. However, when the test was described as producing gender differences and stereotype threat was high, women performed substantially worse than equally qualified men did**..."*

# Structural factors

We've established that there are several factors that influence a student's ability to perform well in school:

- Socioeconomic situation and cultural factors.
- Prior experience.
- Stereotype threat and the feeling of imposter syndrome.

What can we do about it as teachers?

# Take action

**Examine Your Assumptions:**

- Reflect on personal biases and how they influence classroom interactions.
- Use self-assessment tools to identify blind spots.

https://www.colorado.edu/center/teaching-learning/inclusivity/stereotype-threat

# Take action

**Create Inclusive Environments:**

- Incorporate diverse perspectives and represent scholars of color in course materials.
- Use inclusive language and pronounce names correctly to signal respect.
- Provide equal opportunities for participation and leadership roles.

https://www.colorado.edu/center/teaching-learning/inclusivity/stereotype-threat

# Take action

**Encourage Belonging:**

- Personalize feedback to highlight students' strengths and potential.
- Celebrate diverse identities through assignments, readings, and classroom examples.
- Establish ground rules for respectful discussions to promote psychological safety.

https://www.colorado.edu/center/teaching-learning/inclusivity/stereotype-threat

# Take action

**Normalize Mistakes as Growth Opportunities:**

- Reframe errors as part of the learning process, reducing the pressure to perform perfectly.
- Provide structured support through office hours, study groups, and peer mentoring.

https://www.colorado.edu/center/teaching-learning/inclusivity/stereotype-threat

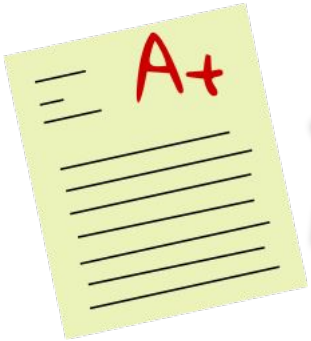
# Take action

**Model Vulnerability and Growth:**

- Share your own experiences of learning and growth to humanize the classroom.
- Invite students to co-create norms that reinforce collaboration and respect.

https://www.colorado.edu/center/teaching-learning/inclusivity/stereotype-threat

# Growth vs. fixed mindset

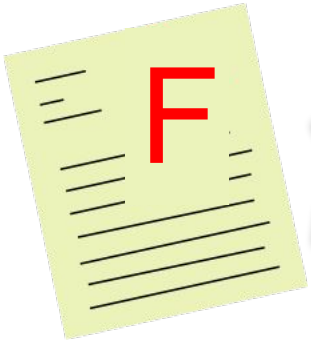



"I'm so good at math!"

**Fixed mindset**
***Natural ability or talent***

"I worked really hard and I got it!"

**Growth mindset**
***Practice and hard work***




"I'm no good at math!"

**Fixed mindset**
***Natural ability or talent***

"I guess I need to work harder."

**Growth mindset**
***Practice and hard work***

# The power of “yet” vs. the tyranny of “now”

The power of “yet”:

- 

The tyranny of “now”:

- …

# Promoting a growth mindset

**Discuss**: Which of these statements promote a growth mindset? Fix the ones that don't.

1. *"They are a B student."*
2. *"Organic chemistry is hard. Some people just don't get it."*
3. *"It will be very difficult to pass the exam unless you study and work hard."*
4. *"If you don't already know this stuff, you'll really struggle in this course."*
5. *"I am sure most of you already know this..."*
6. *"Great job on that presentation!"*

# What can we do as tutors?

- Connect students to resources.
    - Students may not know to value things like office hours, discussion boards, review sessions.
- Time management skills!
    - People will help you plan when to do your work if you ask.
- Making sure that students feel like their voice is being heard.
    - Important: Meet students where they are.

# Takeaways from today

- Much of what we often view as “talent” is really prior experience and practice.
- Be mindful that **a student's experience can be very different from your own** and that some students face additional challenges in their learning.
- Be careful about perpetuating stereotypes.
- Recognize stereotype threat when students exhibit it and try to help them better understand their abilities.
- **Support behaviors which foster learning rather than applauding existing knowledge.**
    - Be careful of the language you use: students are always listening 👂.