



Panel 3 “Beyond:” Designing Anti-Racist Assessments

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Ungrading Bioinformatics — BIO 182

Equity-Advancing Showcase on Education, Spring 2022

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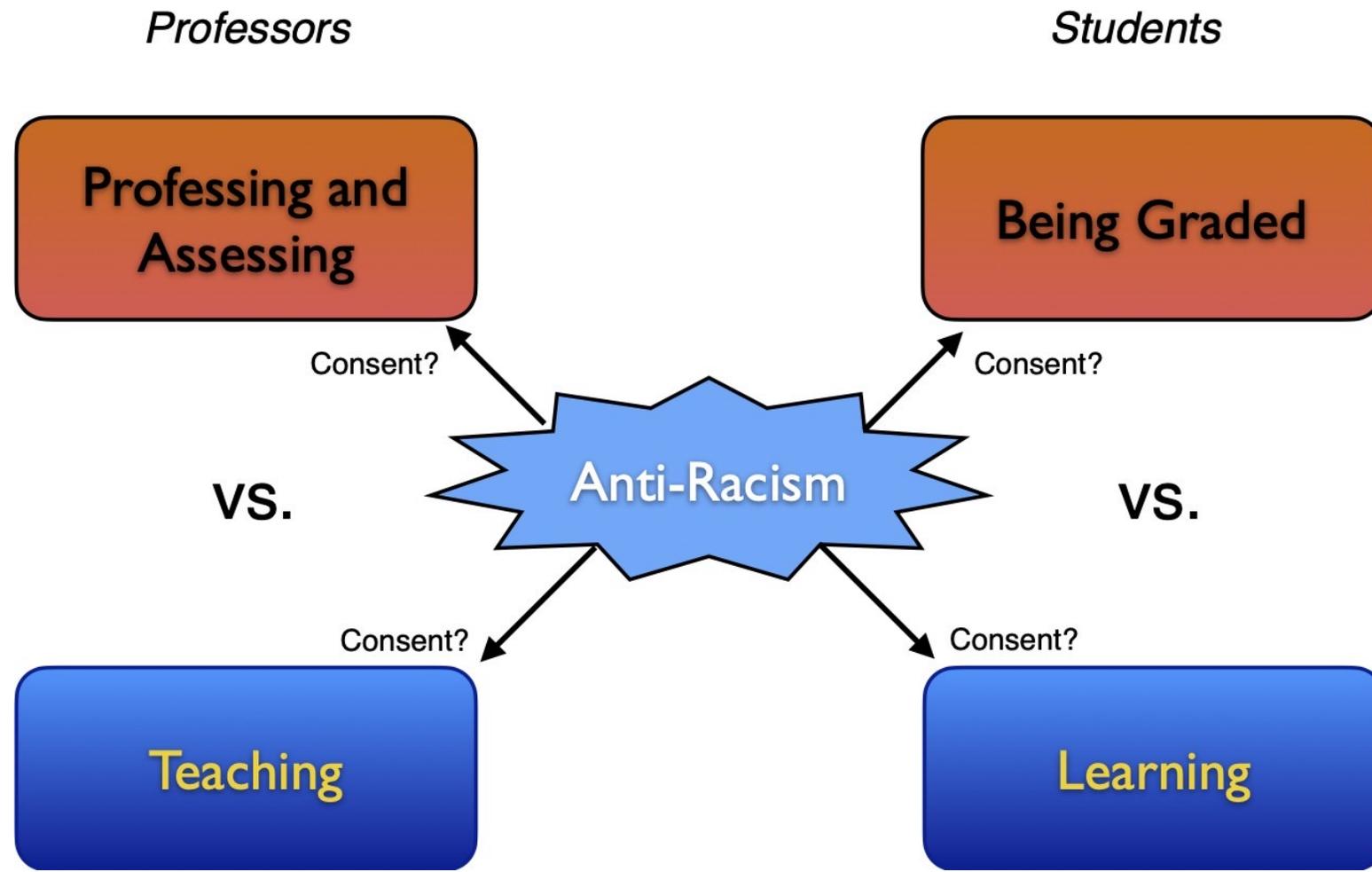
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May 18, 2022

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Ungrading: What is It?

Reflecting on Anti-Racist Pedagogy (ROAR) Take-Home Exercise



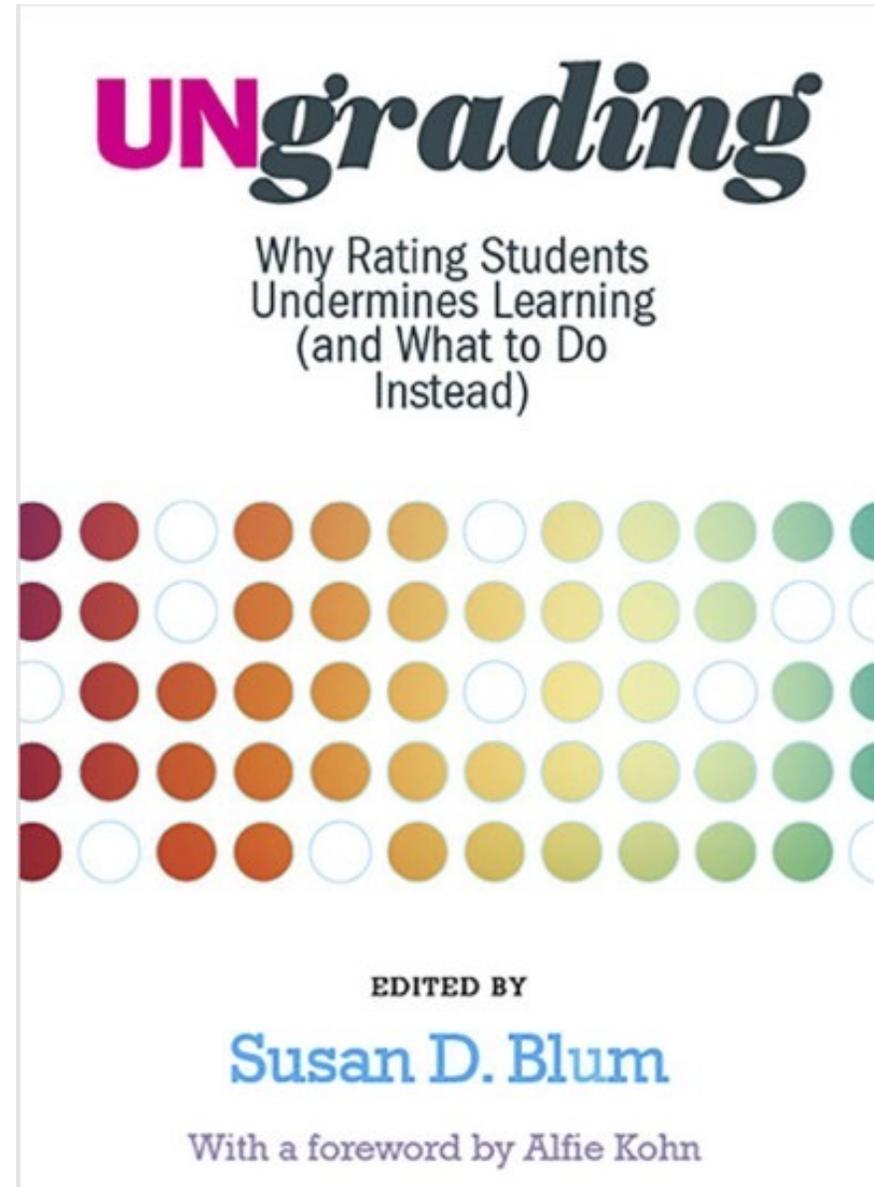
From

<https://www.jessestommel.com/why-i-dont-grade/>

I would argue grading, by any of our conventional academic metrics, undermines the work:

- Grades are not good incentive.
- Grades are not good feedback.
- Grades are not good markers of learning.
- Grades don't reflect the idiosyncratic, subjective, often emotional character of learning.
- Grades encourage competitiveness over collaboration.
- Grades aren't fair. They will never be fair.

Free E-Book on Ungrading



Some Solutions for Ungrading

1. Decenter grading in favor of goals and feedback
2. Emphasize the entire portfolio
3. Have students develop an individual plan
4. Build a practice of self-assessment and self-reflection
5. Conduct portfolio conferences

Reference for Ungrading Book

Ungrading : Why Rating Students Undermines Learning (and What to Do Instead), edited by Susan D. Blum, West Virginia University Press, 2020. ProQuest Ebook Central.

<http://ebookcentral.proquest.com/lib/ucm/detail.action?docID=6370466>.

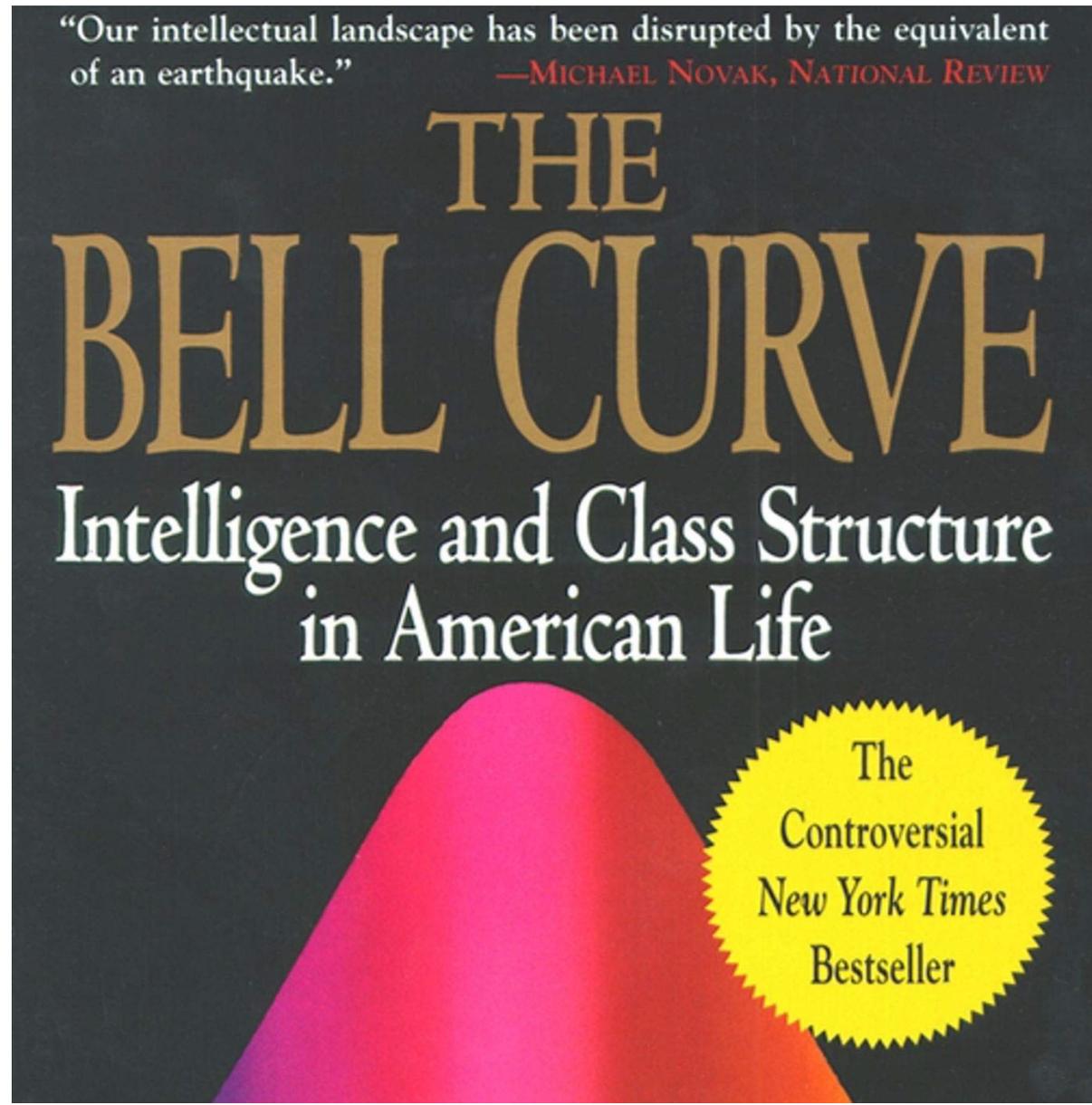
Ungrading: Why I Tried It

Standard Grading Schemes have Roots in Outdated Beliefs on Both Human Variation and Statistics

Letter grade +/- (account: University of California, Merced)

Name	Range	
A+	100%	to 99%
A	< 99%	to 95%
A-	< 95%	to 90%
B+	< 90%	to 87%
B	< 87%	to 83%
B-	< 83%	to 80%
C+	< 80%	to 77%
C	< 77%	to 73%
C-	< 73%	to 70%
D+	< 70%	to 67%
D	< 67%	to 63%
D-	< 63%	to 60%
F	< 60%	to 0%

False and Racist Beliefs About Genetic Determinism Persist



... And are Vigorously Challenged and Debunked by Experts

OPEN ACCESS Freely available online

PLOS GENETICS

Viewpoints

Echoes of the Past: Hereditarianism and *A Troublesome Inheritance*

Marcus Feldman*

Stanford University, Stanford, California, United States of America

In 1969, Arthur Jensen ignited a decades-long debate when he wrote that it is a “not unreasonable hypothesis that genetic factors are strongly implicated in the average Negro–white intelligence difference” [1]. From this he inferred that educational interventions in communities whose members have lower measured intelligence quotient (IQ) could not succeed.

The errors in Jensen’s choice of data [2] and statistical methods used to compute a heritability of about 80% for measured IQ were pointed out by numerous geneticists and statisticians. 25 years after Jensen’s incendiary paper, Herrnstein and Murray’s book, *The Bell Curve* [3], drew inferences similar to Jensen’s that differences among races and social classes in IQ were genetically based. *The Bell Curve* elicited a flood of strong criticisms of the data used, the statistical analyses, and the policy inferences [4]. Much of the criticism of Jensen and Herrnstein and Murray centers on their interpretation of heritability of IQ. In 1975, Richard Lewontin

There has been considerable debate about the representation of human population genetics in a recent book by journalist Nicholas Wade: *A Troublesome Inheritance*. A letter <http://cehg.stanford.edu/letter-from-population-geneticists/> signed by 143 scientists, including 16 members of the *PLOS Genetics* Editorial Board, and PLOS founder Mike Eisen, criticized the book in the *New York Times Book Review* on August 8, 2014. As there is widespread interest in this issue from our Editorial Board, we have invited Marcus Feldman to publish his book review in *PLOS Genetics*.

Inheritance from results on worldwide variation in DNA polymorphisms, namely microsatellite polymorphisms (The Rosenberg-Feldman studies) [7,8] and single nucleotide polymorphisms (another Stanford study) [9], from the Human Genome Diversity Panel [10]. Here, as in his previous journalism about these studies, Wade exhibits a complete lack of understanding of their implications. For example, he does not mention the finding, stressed in both studies, that only 5%–10% of the worldwide genomic variation is between continental groups, while the vast majority is between individuals within

From the data and analyses of worldwide molecular genomic variation, Richard Lewontin and I amplified the conclusions of Lewontin and Barbujani et al. as follows: “The repeated and consistent results on the apportionment of genetic diversity...show that the genes underlying the phenotypic differences used to assign race categories are atypical of the genome in general and are not a reliable index to the amount of genetic differentiation between groups. Thus, racial assignment loses any general biological interest. For the human species, race assignment of individuals does not carry with it any

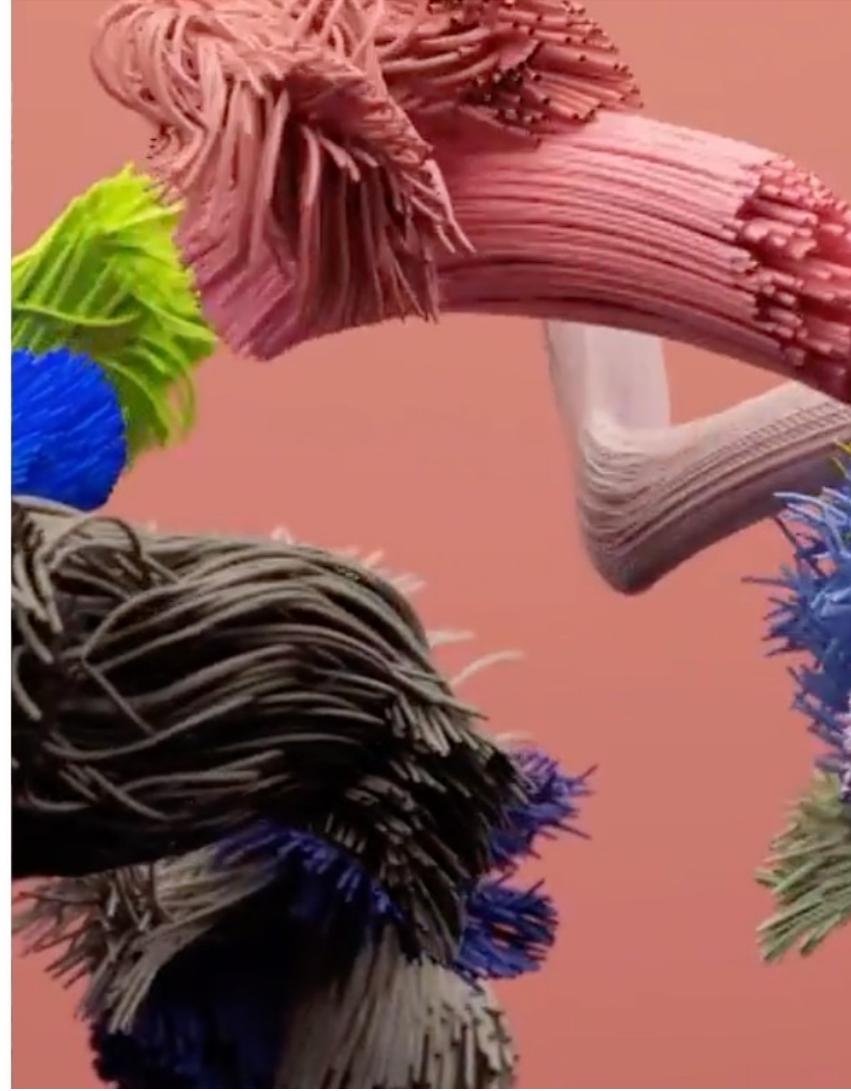
The Science of Human Variation Refutes Racist and Sexist Beliefs



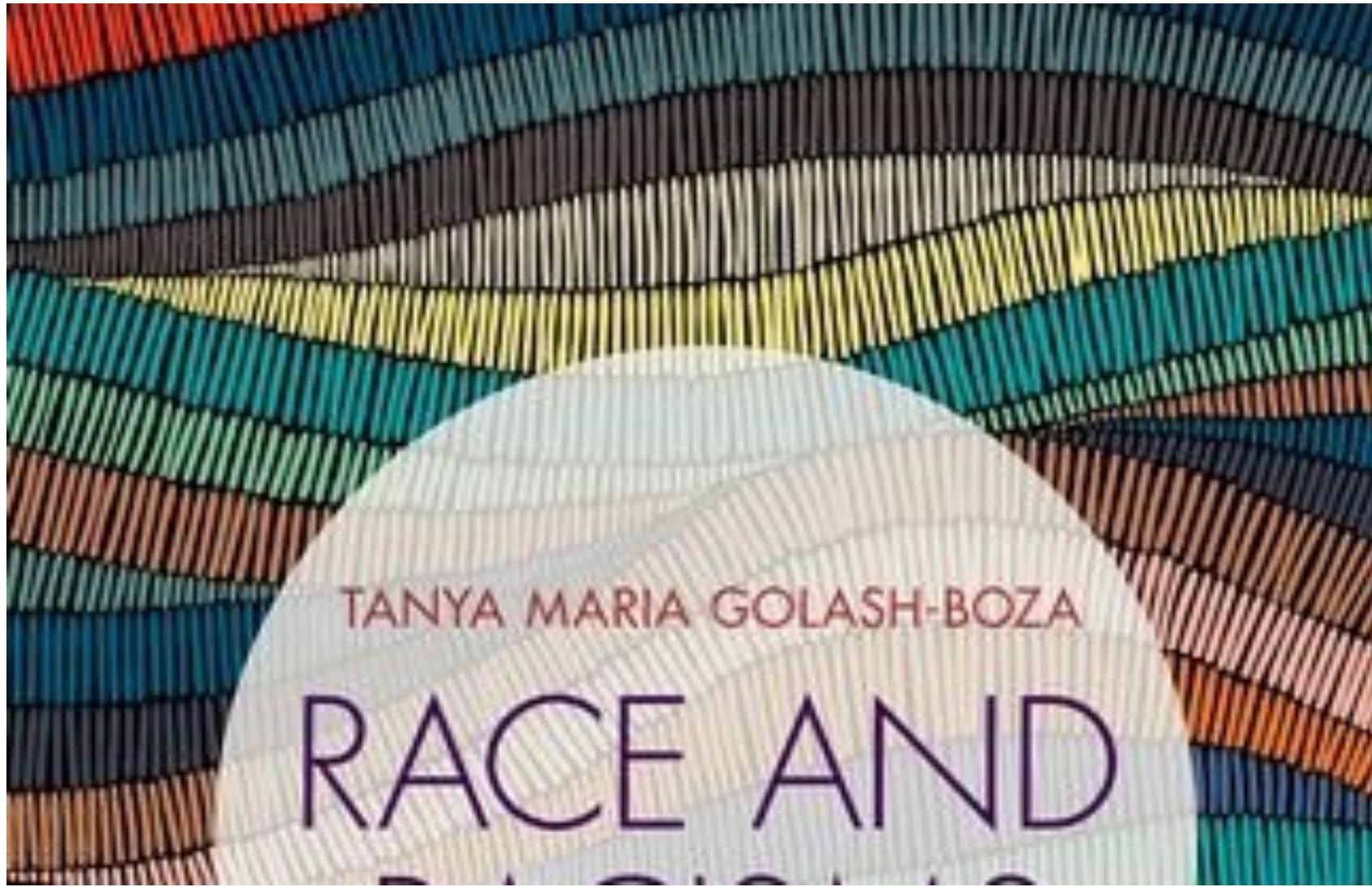
The New York Times

Account ▾

Can Biology Class Reduce
Racism?



A Planned SPARK Seminar on Biology and Sociology of Race, Ethnicity and Gender Could be Great for UC Merced



How I Assessed Students Previously

1. Point-based assessment based on homework, exams, attendance and participation
2. Informally encourage cooperation and discourage competition
3. Syllabus guarantees minimum grades based on point percentages
4. No curving: "All students can get an A!"
5. Grade cut-offs determined dynamically at end of term.
6. Emphasis on Fairness and Transparency of Points, Regrading and Cheating Policies

What Problems I Encountered Previously with Point-Based Assessment

1. Some students approach class competitively
2. Minimax strategy: Some students aim for "C's to Degrees"
3. Some students focus on being assessed rather than learning
4. Some students focus on litigating points or avoiding assessments
5. Some students cheat and plagiarize
6. I bias what I teach in terms of what I can assess
7. I disengage from students as individuals and use points and grading keys to communicate feedback.

Extrinsic motivation leads to the minimax principle. If the only thing you care about is something beyond the activity itself -- an extrinsic reward such as the grade -- it is sensible to do as little as possible to procure the highest possible reward (grade), which Arie Kruglanski, Chana Stein and Aviah Riter dubbed in 1977 the “minimax strategy” in instrumental behavior. Cheating, shortcuts, cramming ... all those make sense if the only goal is points or winning.

Students treat college as a game. Games are fun, but if the goal is amassing points and winning at any price, then game is the wrong model for college -- at least if learning, not just winning, is the goal. Of course, games can also be absorbing and done for their own sake -- playing *Words With Friends* or *Grand Theft Auto*-- so those types of games are fine. Maybe the problem is when it is seen *only* as a survival course.

Students see the rules as arbitrary and inconsistent. Different professors have different scoring -- participation, homework, teamwork or no teams, tests, showing your work, partial credit -- all of which appear to be plucked out of thin air and make no sense, as I found in my research on plagiarism. Citation? Sharing? Page length? Number of quotes? Consult notes or closed book? Students just have to figure out in each case what the professor wants. It all seems arbitrary, and therefore unconnected with anything meaningful or real.

Also see: <https://www.insidehighered.com/advice/2017/11/14/significant-learning-benefits-getting-rid-grades-essay>

From Alfie Kohn's "From Degrading to De-grading."

1. Grades tend to reduce students' interest in the learning itself.
2. Grades tend to reduce students' preference for challenging tasks.
3. Grades tend to reduce the quality of students' thinking.
4. Grades aren't valid, reliable, or objective.
5. Grades distort the curriculum.
6. Grades waste a lot of time that could be spent on learning.
7. Grades encourage cheating.
8. Grades spoil teachers' relationships with students.
9. Grades spoil students' relationships with each other.

Ungrading: How it Went

From Syllabus: Grading and Late Work Policy

- there will be no cumulative total course point totals kept, or grade-based feedback given, to students on either their individual assignments/assessments or on their overall course performance until the very end of the course when their final grades are assigned.
- In most cases, students will be able to make corrections to their work as well as turn in corrected assignments in response to their later learning to the course.
- No credit for attendance or participation will be given.
- Late work can receive full credit; with the exception of hard deadlines to be announced later by the instructors, which are set so as to allow instructors time to provide feedback.
- The course instructors guarantee that all students who demonstrate evidence of strong mastery of at least 85% of course content will receive at least an A- in the course, that all students who demonstrate evidence of mastery of at least 75% of course content will receive at least a B, and that all students who demonstrate incomplete familiarity of at least 65% of course content will receive at least a D.

Feedback from Course Intro Survey

Have you ever been in an ungraded class before? How do or would you feel about participating in a class where the role of grades is decentralized?

I am open to this idea and am overall excited for this course format.

I have not been in an ungraded class before, but I am very interested in how this class will go. I think it is going to allow students to learn more rather than focusing solely on getting a good grade.

I've never been in an ungraded class, but I have been in a few where the exams were all that made up the grade. I very much prefer a class where the grades are decentralized, as it's less stressful, and the occasional mistake won't destroy your grade.

Feedback from Course Intro Survey

No, I have never been in an ungraded class before. As of now I feel unsure about that just because I like to know my grades at all time it calms my nerves or it makes me know that i have to work harder in somethings.

No i have not. I feel excited and nervous because i am so used to always seeing a grade, but i feel this style will help me actively learn.

I have not participated in an ungraded course before. I look forward to the class following this structure because it relieves a lot of the stress and competition of the course. However, my only concern is understanding my progress throughout the course. I would like there to be a sort of "progress report" midway through the semester so that I may verify that my work is satisfactory and how much improvement is needed. This way, I am not caught off guard at the end of the semester if my final grade is not what I expect

Ungrading: What We Learned

Student Comments from Exit Survey — Advantages

"In comparison with more conventional graded courses, what were some of the strengths and advantages of this course's "ungraded" format for your learning?"

- "I was able to learn from my mistakes and resubmit assignments to fix my errors. Additionally, I was not as worried about making mistakes on homework assignments... I was able to work on assignments at my own pace and submit them when I felt I was ready. ... I focused more on trying to master certain skills instead of just memorizing everything."
- "I focused more on actually understanding the concepts and finishing it to my understanding... I felt like I actually learned, not just focused on submitting on time."
- "The ability to fail and learn from the mistakes is much easier to do with this format."
- "It definitely allowed me flexibility in time so I can learn at my own pace. I learned a lot more I think than in previous classes where the emphasis was more on grades than on the learning of it."
- "I liked that there was flexibility with the deadlines it allowed for students to learn at their own pace and schedule studying in a way that better fit their schedules."

Student Comments from Exit Survey — Disadvantages

"In comparison with more conventional graded courses, what were some of the disadvantages of this course's "ungraded" format for your learning?"

- "I think a major disadvantage of this format is that I felt that a lot of students didn't value the class as a priority as they should have because of this format... I feel people lost the motivation to complete assignments. This made a lot of students leave things to the very last minute which may have hurt them."
- "Sometimes there isn't enough feedback so it can be hard to see how improvement can be done."
- "It gave me a sense of uncertainty at times because I did not know what grade I was going to get until the end."
- "The openness is a great format but it's a bit too open where individuals are not prioritizing enough material and if there were a bit more stronger deadlines for assignments, then students would learn more and invest more time into the material. although the material is dense, it is fascinating and really fun to learn. "

Student Poll on Grading Format

Attempts: 16 out of 16

True or False: "the ungraded format of BIO 182 was helpful to my learning of Bioinformatics 182"

True	14 respondents	88 %	<div style="width: 88%;"></div> ✓
False	2 respondents	13 %	<div style="width: 13%;"></div>

-0

Discrimination Index



88% answered correctly

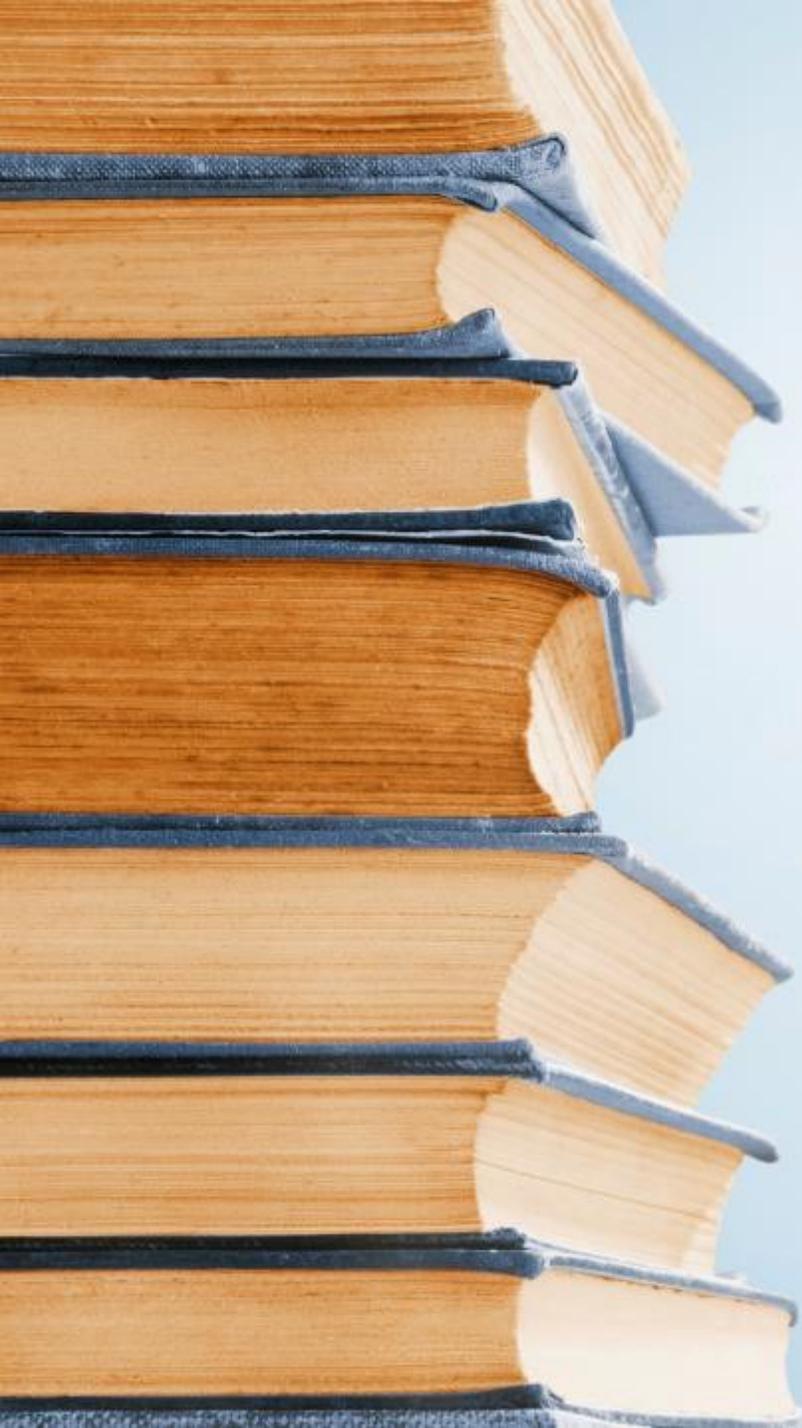
Reflections from Fatemeh, the Teaching Assistant

1. Students are unfamiliar with ungrading, unclear about expectations and reach out frequently.
2. Evaluating humanly and responsively requires more work and flexibility. Ungrading requires more work.
3. Careful planning required around scheduling to spread student effort over the semester.
4. Evaluating students is much better than grading them if done carefully.
5. If they still see a number and they will fight for a higher number. If a course is based on numbers, they will fight for a higher number.

Reflections from the Professor (me)

1. Ungrading centers teaching and learning.
2. Ungrading personalizes teachers and students.
3. Self-assessment and active learning require student engagement and is challenging in hybrid mode and with low attendance/participation.
4. Students are attached to having grade-based feedback.
5. CatCourses is specialized for grade-based assessment.
6. Important to manage the timeline of feedback and regrading to avoid too much work falling on TAs.

The End



**Emergent outcomes
as assessment:
The value of
community cultural wealth
& storytelling as data**

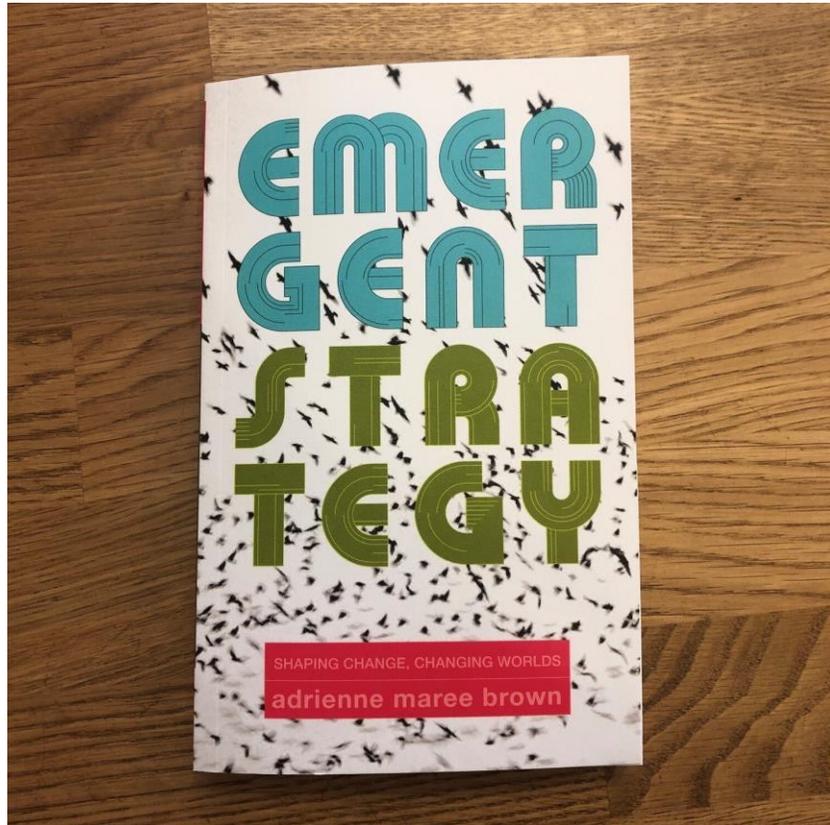
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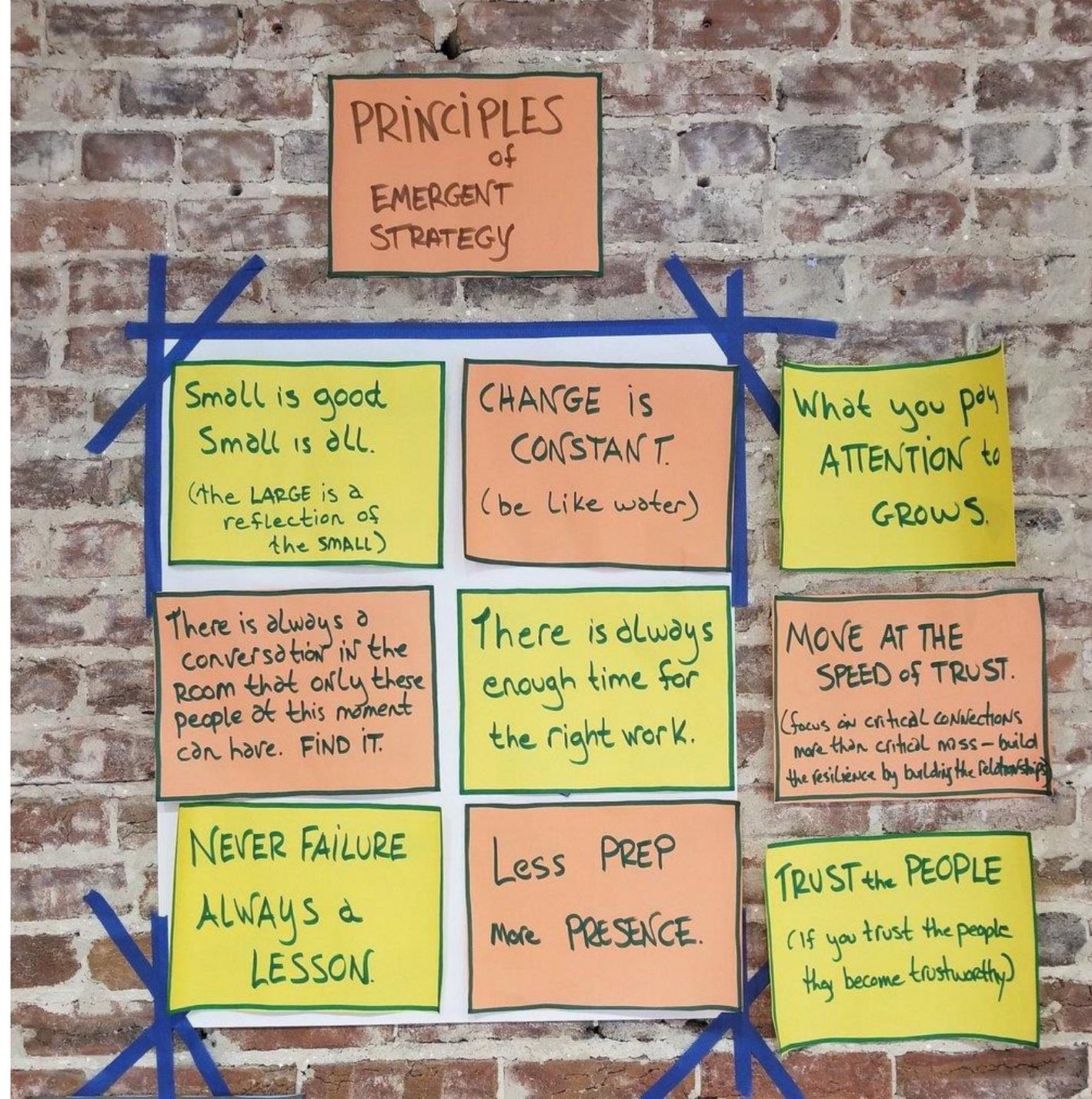
Beyond backward design, alternatives to learning objectives

- “...what is missed by focusing on what students will know and be able to do by the end of a course[?]” (McCreary 2022)
- Shifts to focusing on learning in the *present moment* and what is *already known*
- A pedagogy of *intentionality* for both students and instructors
- Emergent “non-striving” to create room for flexibility and adaptability

Emergent outcomes



**Emergent Strategy by
adrienne maree brown:**



EMERGENT CRITIQUE

- Community cultural wealth and storytelling [ITEK] are pillars in which emergent outcomes are built
- An integrated, weaved, spontaneous, open-ended, meaningful, and collaborative process for holistic, whole-person learning



COMMUNITY CULTURAL WEALTH MODEL (YOSSO 2005)

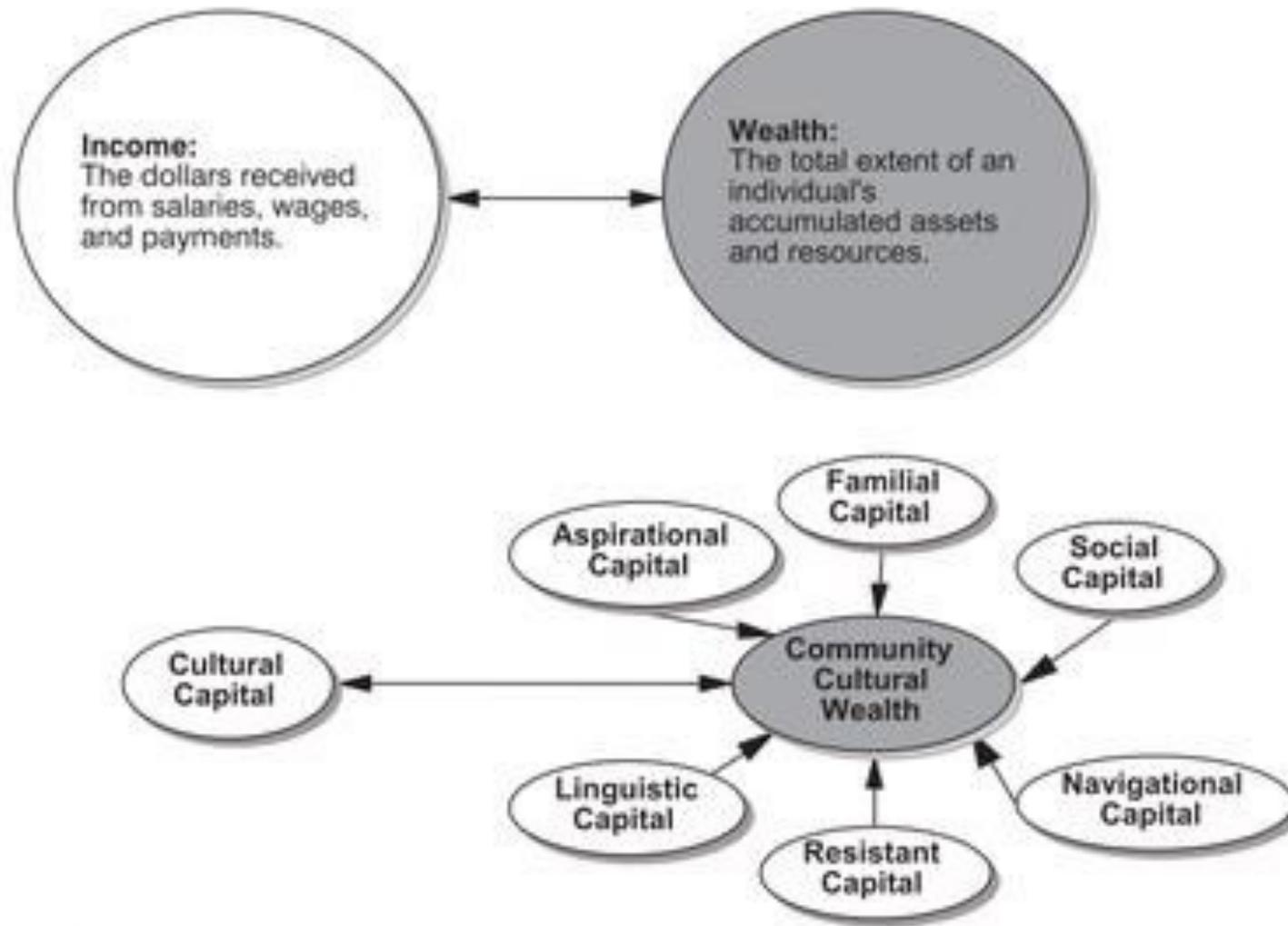
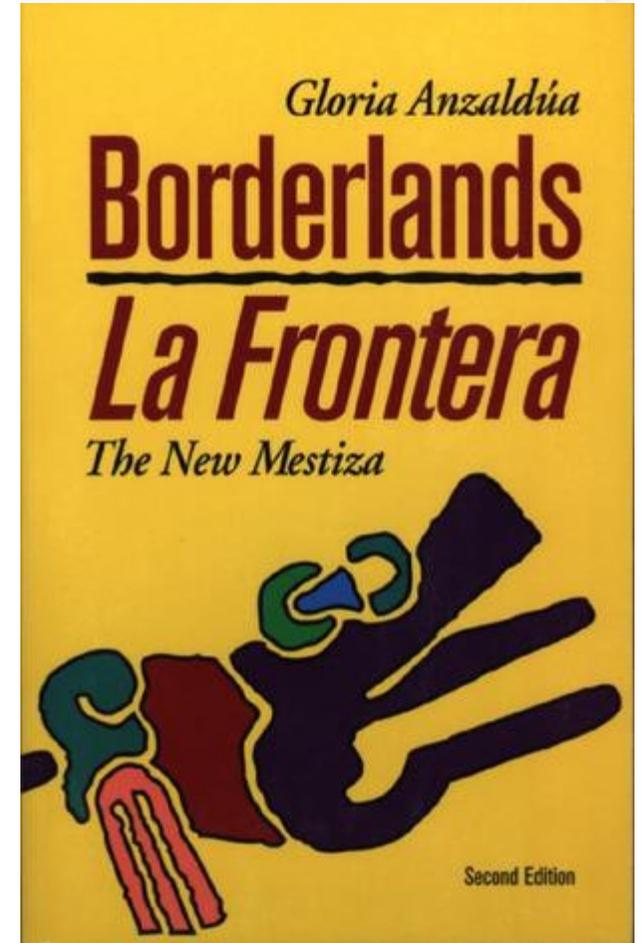


Figure 2. A model of community cultural wealth. Adapted from: Oliver & Shapiro, 1995



Storytelling as data

- North Fork Mono creation story: the Inchworm was able to retrieve the Falcon caught on a high rock by going up the rising water table created by fires put on the land by the Mono.
- “We burn to restore the land, restore the resources, restore water. To bring it back to where it can reproduce on its own. We're burning minimally three times in 10 years. Then the next 20 years, you're only going to need to burn once. That's what we call a 30-year cycle. The decisions that we make and our practices that we do today affect generations down the road,” Goode says.



How the Indigenous practice of ‘good fire’ can help our forests thrive

Share this story

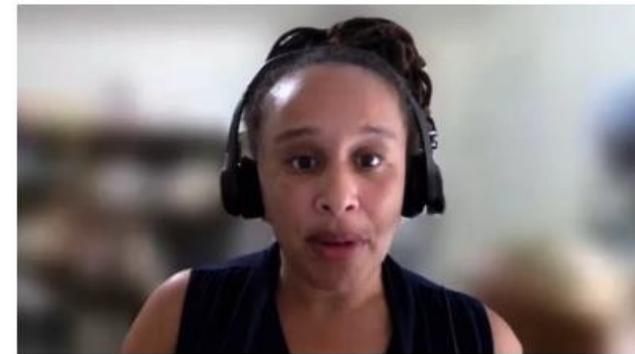


Once outlawed, cultural burns can save our forests from uncontrollable wildfire

April 6, 2022

Article by: Robyn Schelenz robyn.schelenz@ucop.edu

Video by: Jessica Wheelock jessica.wheelock@ucop.edu





Indigenous Traditional Ecological Knowledge (ITEK)

- **Honorable Ron W. Goode, Tribal Chairman of the North Fork Mono Tribe: what's missing from the land? He will tell you it's fire.**
- **UC Davis professor of Native American Studies Beth Rose Middleton Manning: the wisdom of ITEK is one of the keys to unraveling the deadly cycle of California wildfires.**
- **Cultural burning or “good fire”:** Of spiritual and cultural importance, the burns are designed to cultivate the biodiverse, sustainable growth that make landscapes more resilient.

Emergent Assessment: Reflective wrapper

- Example outcome: “By the end of this module, the student will be able to demonstrate the ability to apply the concept of xyz to their own experience.”
- Response to questions throughout the semester in a scaffolded journal project
- 20% of overall grade

INITIAL QUESTIONS:

- Why are you taking this course?
- What do you hope to learn? What are your interests?
- What community do you work with/are from?
- What do you already know about xyz ...? What would you still like to know about xyz ...?

MID-SEMESTER & END OF SEMESTER QUESTIONS:

- What questions do you still have about xyz ...?
- Do you feel like your voice is incorporated in shaping classroom dynamics? What about your peers' voice?
- Is this class relevant to current events? To the community you work with/are from?
- Let's revisit why you took this course, is it what you hoped to learn?

Let it go

Student emotional engagement and its relation to self-efficacy

The problem

ENGR 057 (Statics & Dynamics) is considered a “weeder” course

- Bleak post-COVID landscape
- Low attendance
- Low engagement

Hypothesis: students are dealing with emotional, instead of intellectual, obstacles

The idea

Self-efficacy is the name we give to a person's belief in their capacity to execute behaviors necessary to produce specific performance attainments (Bandura, 1977)

Mastery experiences = Self-efficacy ↑

Intervention*



**3/100 points total*

Fears

- Lack of rigor
- Unrelated to CLO
- Loss of control
- Unprofessional

The result



- Improved attendance
- Office hours presence
- Student initiative
- Study groups
- Happy faces

Thank you!