

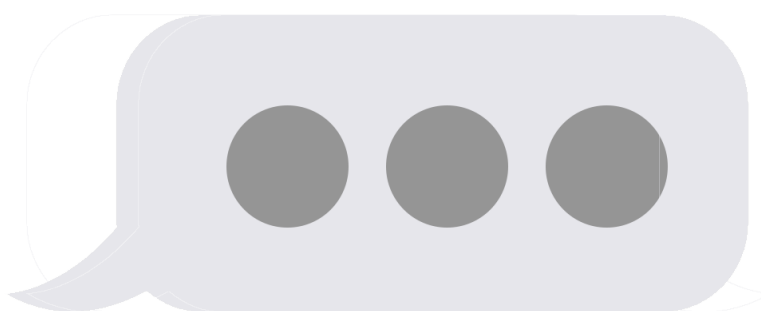


Rebecca Awuah and Lauren Ju

Unsaid Thoughts



A conversation about
class dynamics





Throughout these past four weeks, a common topic of discussion has been the idea of objectivity.

Mainly, is STEM objective, and if not, is objectivity even realistically achievable?

Sandra Harding and Helen Longino both emphasize the idea that science happens in conversation with society at large. In other words, science is not practiced by individuals, but by social groups. Consequently, scientific knowledge can be better characterized as a type of social knowledge that reflects and entrenches the beliefs, assumptions, and values of dominant cultures. This is especially evident when looking at scientific racism and eugenics, which continue to justify violence and oppression under the guise of objectivity and logic. Even practices like peer review, which seek to eradicate authorial bias, can be powerful tools in gatekeeping minorities or advancing certain agendas. (Take Dr. Andrew Wakefield's 1998 study claiming that the MMR (measles, mumps, and rubella) vaccine causes autism, which was peer reviewed before publication, for example.)

This understanding of objectivity can also be applied to the classroom, where the generation of knowledge within HSTEM is also subject to bias and gatekeeping.

The conversations we have, values we establish, and problems we identify are all shaped by who can participate. As such, it is crucial that we also investigate who is engaging more vocally and why. Is it because some students lack the "social capital" and "proper language" required by elite institutions, like Tony Jack writes about? Have some students been socialized to believe that their thoughts and contributions are less important than others? Or maybe, is the classroom just too intimidating for some?

As we talk about what it means to be human in STEM, it's important to consider the intersectional experiences that we carry with us.

Individually, we possess unique relationships with race, class, sexuality, gender, and other identities that shape our classroom experiences.





Our goal is to highlight the importance of what we bring as unique individuals and propose techniques that foster equitable, more welcoming spaces. This project and formatting was inspired by how we often texted each other throughout class—to give commentary, agree or disagree with classmates, or reflect on readings. Texting was an easy medium to express ourselves where we might've been too hesitant to raise our hands in class. Through this project, we seek to better understand the forces that shape our classroom dynamics and identify what we—as individuals and collectively—can do to further promote more accessible conversation.

We decided to draw from both personal experiences and an anonymous survey asking students to reflect upon their HSTEM experiences.

Black and Latinx STEM majors are 15 and 14 percentage points more likely to leave school compared to White peers, respectively (Riegle-Crumb et al., 2019).

Here are some quick stats:

62% of black STEM workers say they have experienced any of eight specific forms of racial or ethnic discrimination at work, from earning less than a coworker who performed the same job to experiencing related, small slights at work (Anderson 2018).

42% of Latinx workers faced discriminatory acts in STEM jobs (Anderson 2018).

44% of Asian workers reported experiencing discrimination in STEM jobs (Pew Research Center 2018).





[Jack] shows how intention without proper implementation is worthless.

As Jack comments on programs like “community detail” at Harvard that unintentionally reinforce classist power structures that lead to BIPOC students serving their white classmates, he shows how intention without proper implementation is worthless. Although a classroom is not exactly like a “community detail program”, it is valuable to consider how proper implementation in a classroom can mitigate uncomfortable programming and unbalanced dynamics.

It’s important to understand how these dynamics seep into the classroom because a classroom is not immune to the notion and influence of how “social capital” affects our interactions with others. In fact, the “social capital” Jack discusses can give rise to the same feelings that **lead to social withdrawal from both the community of a school and a classroom.**

Jack discusses how the “common response” of students who don’t grow up with access to this “social capital” often

“withdraw from the college community, resulting in a circumscribed life on campus” as the “shockin, painful, maddening....social undercurrents” take a toll on students.

Deficit-based thinking can be especially harmful because it veils larger systemic issues that harm minorities in STEM.

The problem isn't that marginalized people "lack grit" or "drop out," but rather that there are larger structures of inequality that hurt some students more than others.

Dr. Beronda Montgomery reminds us to shift our mindsets from “gatekeeping” to “groundskeeping”. **In groundskeeping, we don’t look to pinpoint and address individual deficits, but to instead cultivate environments where we recognize and remove barriers to success.** As individuals, we all have the power to become groundskeepers. In groundskeeping, we establish trust and solidarity between all members of our HSTEM community. How can we practice groundskeeping ?





While there are many ways that STEM related systems falter, there is hope in utilizing techniques to foster inclusive and encouraging classroom environments. Through our survey, we sourced effective techniques that teachers can implement in their classrooms. In our responses, we found that using “positive micro affirmations”, to encourage students -whether that be nodding your head or zoom reactions- led to a more positive experience for students. In addition, many HSTEM practices were shown to be useful for fostering a comfortable community. The guidelines for sharing that we made in our cohorts and establishing the collective glossary helped minimize uncertainty in expectations as well as created collective knowledge. Breakout rooms were also shown to be an effective strategy for classrooms. In breakout rooms/accountability groups, students communicated that they felt the most comfortable because they felt like, “we discussed topics

"Sometimes if a professor is too immediately judgmental of what students say, that can make me hesitant to speak up." -Anonymous

"Accountability groups because we got to know each other more in our breakout rooms. When one person (student or facilitator) shares something vulnerable, it becomes easier for other people to follow with their own personal anecdotes." -Anonymous

casually” and “were really able to bring up things they were confused or unsure about”. It seems reasonable to conclude that most open sharing takes place in breakout rooms, so we propose a metric for how to bring this diversity of sharing to bigger gatherings. We propose having a set of roles that each person in the breakout room plays (facilitator, reporter, recorder, etc). These groups will stay the same throughout the course of the class, but the role each person plays will change. Additionally, we propose having more workshops that practice the act of calling in/ calling out. This will mitigate the uncomfortable nature of doing these things and give students the tools to do so. Furthermore, we believe that courses in STEM, and widespread courses, could benefit from anonymous feedback to faculty and students that consistently happens throughout the class.





Maybe: Anonymous

"My interest in medicine and medical research was motivated by poor medical structures in my country. Public hospitals have poor structures- e.g. patients sharing beds. I also think corruption has affected the health-care system. The current cabinet secretary for health does not hold a medical degree and does not understand the health system yet he makes major decisions around the pandemic. " -Anonymous

"It felt like the course was geared a bit towards pre-med/bio/chem students rather than encompassing all STEM fields - it would be nice to see other subject areas like computer science/maths/engineering incorporated in discussions and the syllabus too." - Anonymous

"I felt closed off and frustrated during a discussion of the history of medicine in one of my classes because I felt like most people in the classes could distance themselves from the violent truth through this academic lens."- Anonymous

HERE ARE SOME UNSAID THOUGHTS

