**SABER talk Q&A**

**Unanswered questions**

Erika Williams 10:40 AM

What would you say you learned from this experience?

Gina Poe 10:45 AM

Is there room for culture in mainstream science? There must be because the dominant culture is strongly there: standard Amercian or The King’s English rather than anything ese in publicatiosn and science talks. How do we incoorporate cultural differences so that scientists can really truly bring their whole sevels rather than conforming to the historial norm? Are ther eexamples for this that have worked in the past and have enriched science because of it?

Edna:

Thank you Gina, for your question. I would argue so –room for culture shift in mainstream science --if mainstream science is committed to equity and justice beyond “equity as inclusion”. The statistics have not shifted much with the makeup of science professionals – still mostly White, and male. In K12 science education research, we know it is not so much as “achievement gap” as it is an “education debt” (Gloria Ladson Billing’s work). And we know in science, minoritized students talk about an identity gap, even when they do well in test scores, they do not feel science is for them. So it is a matter of sanctioned norms and practices, which is the makeup of culture, what and who are valued, when and how. There are definitely studies in K12 science education research that investigate and describe culture shifts in the classroom, here are some:

Bang, M., & Medin, D. (2010). Cultural processes in science education: Supporting the navigation of multiple epistemologies. *Science Education*, *94*(6), 1008–1026.

Bang, M., & Marin, A. (2015). Nature–culture constructs in science learning: Human/non‐human agency and intentionality. *Journal of Research in Science Teaching*, *52*(4), 530-544.

Calabrese Barton, A., & Tan, E. (2020). *Beyond Inclusion: Equity as Establishing Rightful Presence.* Educational Researcher, 49(6), 433-440. DOI: 10.3102/0013189X20927363

Calabrese Barton, A., & Tan, E. (2019). *Designing for rightful presence in STEM: Community ethnography as pedagogy as an equity-oriented design approach*. Journal of the Learning Sciences. *28*(4-5), 616-658 DOI:  10.1080/10508406.2019.1591411,1-43.

Ladson-Billings, G. (2006). From the achievement gap to the education debt: Understanding achievement in US schools. *Educational researcher*, *35*(7), 3-12.

Tan, E., Calabrese Barton, A., & Benavides, *A.* (2019). *Engineering for sustainable communities: Epistemic Tools in support of Equitable and Consequential Middle School Engineering.* Science Education. 103(4), 1011- 1046.

Carrie Diaz Eaton (any pn) 10:51 AM

Thank you so much & my brain is already trying to make all sorts of connections! A lot of what I hear in this approach reminds me of open pedagogy/open education practices which, when applied to STEM, empasizes students already as scientists with the ability to construct and contribute to new science knowledge where their voices are heard (in addition to cultural wealth models and others that emphasize leveraging student passions). Does this OEP sound close to the ideas here or do you think this is a new paradigm that is emerging specific to teaching STEM for social justice?

Edna:

Thank you for your question, Carrie. I think there are overlaps between Rightful Presence for science teaching and learning and open pedagogy/education practices in that there is an explicit attention on positioning students with resources and talents to bring to the table, in co-designing science teaching and learning experiences. What is different is the explicit focus on power dynamics in Rightful Presence. We would argue that even in open pedagogy, not every student is able to have their voice or ideas or resources validated, because of the dominant culture of science that privileges white male middle class values. Rightful Presence would argue that allied political struggles need to occur, where the more powered teachers need to structurally and overtly solicit minoritized students’ ideas, resources, etc.

**Answered questions**

Stanley Lo 10:01 AM

Hi Edna, just want to say hi! (: Thanks for joining us and sharing your work with us!

This question has been answered live

Gina Poe 10:21 AM

Mr. A missed a valuable opportunity to make the science of forensics even more central for Amir and his classmates. If he’d acknowledged Amir’s experience he could have made the point that such bias - such ignoring of the facts - is WHY it is critcal to put unbiased science front and center into the forensic discovery process.

This question has been answered live

Gina Poe 10:22 AM

Thank you for this important presentation!! I love the idea that students are not guests, but have a right to be theere and participate in the process of sciece discovery.

This question has been answered live

Gina Poe 10:40 AM

Amazing! Brought tears to my eyes.

This question has been answered live

Anonymous Attendee 10:40 AM

Could you talk a bit about ideas for applying these principles to undergraduate education?

This question has been answered live

Martha Patricia Kirpes 10:41 AM

How is this rightful presence work being scaled to continue into the next grades into which students will go, so it is not a "one-off" STEM experience?

This question has been answered live

Jeanette Starpine (they/she) 10:41 AM

Suggestions for scientists working in outreach looking to add an ethnography component that have not done this before?

This question has been answered live

Gina Poe 10:41 AM

How would a teacher caught off guard in the moent, respond respoectfully when they have not yet had time to think about it and the way the question callenges their own biases? What is a good, respectful place holder while the teacher processes it?

This question has been answered live

Tigress McDaniel 10:46 AM

How many of the students statements have been disclosed in your study? Have there been consideration to publish all of the students’ statements? (because they are eye-opening and teachers and administrators need to know exactly how the students feel/perceive

This question has been answered live

Jamie Tanas 10:46 AM

Allowing students to bring their whole selves to the classroom, very powerful. Thank you Dr. Tan

This question has been answered live

Christelle Sabatier 10:52 AM

Your talk was so inspiring thank you. So much of this work starts with self-reflection and opening up our curriculum to give time to student voices.

This question has been answered live

Tigress McDaniel 10:58 AM

Please do share the papers!

Thank you!

Erika Nadile (You) 10:58 AM

Private answer

I will have them posted to the SABER website with the recording!