Earth 194 DE: Readings in Geoscience DEI

Week Two: Geosciences in the Classroom

What I need to bring:

- Ipad with papers annotated
- These notes printed
- Copies of this resource on terminology https://indigenousfoundations.arts.ubc.ca/terminology/

Go through and remind everyone of each other's names:

- ☐ Attendance during introductions

Review of serial testimony, especially for those that missed class last week
Check in about syllabus and quizzes again - maybe change quiz due date? Feedback was: make quiz due at midnight instead of ten pm and post reflection questions earlier than monday!

Serial Testimony - Two rounds, any questions (Notes: Two rounds took a little too much time since there were more people - next week we will try one round)

1. In the introduction of Blake et al 2015 they cite a statistic that only 11-15% of 7th and 8th graders take a year of formal Earth Science classes. Think back to your exposure to geology throughout your education (middle school, high school, undergrad, etc). What were your experiences with geology in the classroom? How do these experiences relate to your racial/ethnic identities?
    a. *I remember vaguely taking earth science classes in middle school, like learning about plate tectonics and making an arc volcano hawaii replica with egg cases. My high school had an environmental science class, but I took marine science instead and loved it. I grew up on the coast in San Diego so I think that the context of growing up on the ocean really drew me to oceanography over geology. And that privilege of getting to live by the sea and go to the beach all the time feels related to being White and privileged. Even though my high school was primarily Black and Hispanic, the honors/seminar classes were always dominantly White, so things like AP Environmental Science were not as accessible to minority students. In college I majored in marine biology and worked in an Earth Science lab. The first time I took a geology course was in my first year of my PhD program, and it was the first time I had been camping. I remember feeling totally lost putting together a tent and feeling like I didn't belong. I can only imagine how that experience might be amplified for non-white students.*
2. What lessons did you take away from Blake et al. 2013 and Bevier et al. 1997 about effectively increasing minoritized student participation in geoscience? How could these lessons be leveraged for higher education, like in the UCSB Earth Science department?
3. The longer introduction of Blake et al. 2015 had a great synopsis of geoscience education for minoritized groups. Was there anything that stuck out to you in the studies

they discussed? What argument in their introduction was the most compelling to you about why we should care about increasing minority participation in the geosciences?

4. How does Bevier 1997 treat western geoscience knowledge versus Indigenous knowledge? How well did they do integrating both western and Indigenous knowledge in their program?
    a. *I think that although they did a good job at integrating First Nation knowledge in their program, like the appendix including oral traditions, and giving some power to Indigenous people in organizing the program, there was some tension between Indigenous and western knowledge, and it still felt as if western science was presented as superior to Indigenous knowledge. It reminded me a lot of the "academic protocol" from last week, where traditional science has little room for discussion that doesn't adhere to a strictly objective framework.*

Language check in around Indigenous vs Native vs Aboriginal, etc from the online resource - note that the reading is set in Canada

- Terminology, particularly as it relates to Indigenous peoples, can be tricky to navigate. A term that might be acceptable to some might be offensive to others. Because of this, many people do not feel confident using certain terms when referring to Aboriginal peoples. Fear of using the "wrong" word should never stifle important dialogue and discussions that need to be had. - this is a nice connection to reinforce the Sue paper from week one
    - Aboriginal: The term "Aboriginal" refers to the first inhabitants of Canada, and includes First Nations, Inuit, and Métis peoples. Also common in Australia, but not in the United States.
    - Indigenous: Indigenous is a term used to encompass a variety of Aboriginal groups. It is most frequently used in an international, transnational, or global context. In the UN, "Indigenous" is used to refer broadly to peoples of long settlement and connection to specific lands who have been adversely affected by incursions by industrial economies, displacement, and settlement of their traditional territories by others. Common in the United States.
    - Native: The term "native" does not denote a specific Aboriginal ethnicity (such as First Nation, Métis, or Inuit). In the United States, the term "Native American" is in common usage to describe Aboriginal peoples. In Canada, the term "Aboriginal" or "Indigenous" is generally preferred to "Native."
    - If you are referencing a specific group, it is generally considered more respectful to use another term that more specifically denotes which peoples you are referring to.
    - There is no official consensus on when to capitalize certain terms. Some people consider capitalization a sign of respect to the people you are referring to.

Potential Discussion Questions:

- Context is a major theme throughout both papers - how could we use context here in socal for K-12 geoscience education ?

- How do these papers on geoscience education in social sciences differ from other papers you have read with more “traditional” hard sciences? What do you like and not like about these differences?
    - *I thought a really explicit section about limitations and improvements for future data collection was so great - I would love to see that as standard practice in other fields like geochemistry - I think a major challenge for studies like these is in data visualization/presentation - lots of tables and charts and few figures*
- Think about the types of data in these papers - survey data - which was more compelling, the free response or numerical? What biases might there be for each?
    - *Some clear biases with likert scales like acquiescence bias, central tendency bias etc*
- What are the 5 pillars that the program investigates? 1 - professional development, 2 - summer geoscience research 3- virtually exploring the geosciences 4- geoscience exposure events 5 - geoscience community outreach programs
- What were the strengths and weaknesses of the Blake paper? What would you have liked to see done in future iterations following this pilot?
    - *it's all minority serving institutions but I would have liked to see more data breakdown by race, gender, ethnicity - different groups may respond differently to the 5 pillars - it would also be really interesting to figure out which of these 5 programs was the MOST effective and if that changes across minoritized groups*