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Things Your History Teacher Won't Teach You: Science Edition

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OVERVIEW: This work summarizes the findings 18 Black women science teachers engaging in Sista Circles where they discuss and develop anti-racist, liberatory approaches to science teaching and learning.

AUDIENCE: Administrators (K-12), Instructional designers, K-12 science teachers, Science education leaders, Secondary science teachers

KEY POINTS

- Ranging from 1 to 22 years of experience, Black women teachers across the country and including international participants in Canada and Qatar participated in the Sista Circles.
- Placing a Black woman teacher in a science classroom without embracing her ideologies and classroom philosophies does not create a psychologically safe environment for that teacher or her students. Sista Circles regard "Black women's experiences and wealth of knowledge as power".
- The findings of the study reveal that Black women science teachers enact anti-racist science teaching by bringing something new to the community; using NGSS standards within the context of the community; teaching at the intersection of history, culture, and science learning and teaching; and building critical consciousness in the science classroom.
- The power and necessity of Black women teachers are paramount in science classrooms specifically because of the neutral, apolitical ways science teaching has been approached in the past.
- The Black women science teachers in this study demonstrate an art of science teaching that can be captured using the language of three culture-based frameworks of anti-racism — liberatory pedagogy (hooks, 1994/2015), Historically Responsive Literacy (Muhammad, 2020), and Culturally Relevant Pedagogy (Ladson-Billings, 1994).

INTRODUCTION: As PreK-12 science teachers and teacher educators strive to dismantle oppressive practices in their classrooms and curriculum, it would be helpful to learn from Black women science teachers who have been engaging in anti-racist practices before the racial awakenings of Summer 2020. The Black women science teachers in this study demonstrate an art of science teaching that can be captured using the language of three culture-based frameworks of anti-racism — liberatory pedagogy (hooks, 1994/2015), Historically Responsive Literacy (Muhammad, 2020), and Culturally Relevant Pedagogy (Ladson-Billings, 1994). This study followed an intersectional qualitative methods tradition (Esposito & Evans-Winters, 2020). Intersectionality is also an analytic tool used to "amplify and highlight specific problems, particularly by drawing attention to dynamics that are constitutive but generally overlooked and silenced" (Crenshaw, 2011, p. 232). This study offers insights into how the critical consciousness of Black women teachers can be represented in the science classroom even in times of nonsupport.

FINDINGS Criticality is a tenet that lives in each anti-racist framework and all four themes from this study. Bringing new experiences to students of color, while also honoring the assets in their community is an act of Criticality (Theme 1). Giving space for students to ask critical sociological and scientific questions (Theme 2) and to use historical knowledge to make sense of socio-scientific issues today (Theme 3) are acts of Criticality. Lastly, bringing critical consciousness to science education (Theme 4) by ensuring neither their curriculum nor self-reflection maintains the white status quo is an act of Criticality.

TAKEAWAYS

In science education, we can use the language of Criticality as explained by Muhammad (2020) to make sense of how we can transform our science curriculum in the pursuit of liberation. Instead of teaching facts, we must teach truths. While "facts do not capture the full narrative of people but are taught in schools as the histories of people of color", for example, COVID-19 disproportionately resulted in the death of Black and Brown people in America and around the world; in turn, "truths, are the realities and lived experiences of persons experiencing the moment, which equally contribute to the same narrative" (p. 120). The death of Black and Brown people was not due to a moral failure but to systemic conditions that left marginalized communities with few options to stay home and remain safe. Our science curricular practices must hold truths that "move toward listening and honoring the voices of the marginalized person" (p. 121). To continue the healing of all Black women science teachers, we must look to our elders to hold teaching spaces about our legacy and allow for innovation in the science classroom.

Full Title: "Things Your History Teacher Won't Teach You: Science Edition": Black Women Science Teachers as Anti-Racist Teachers