Centering Blackness: Implementing Space that Fosters Racial Justice and Radical Self-Care in STEM

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23% Intention Vs. 9% Graduation
Black Student Experiences in STEM

• Racialized and gendered learning spaces (e.g., Morton & Parsons, 2018; Ireland et al., 2018).

• Challenges with representation and voice (e.g., Lundy-Wagner, 2013; Malcom & Malcom, 2011).

• Heightened negative social-emotional feelings (e.g., Jett, 2019; McGee, 2020).

• Expressed beliefs about having to modify their identity to be successful.
  • Racialized metacognitive praxes (Morton, Gee, & Woodson, 2019)
    • Stereotype Management (McGee, 2016)
    • Stereotype Manipulation (Ong, 2015)
    • La Facultad (Anzaldúa, 1999 as cited in Johnson et al., 2011)

• Leverage resources and opportunities primarily external to STEM spaces to persist (e.g., Ortiz et al., 2019; White, DeCuir-Gunby, & Kim, 2019).
Black in 2020+
Purpose & Research Questions

• This paper explores the design and implementation of a virtual network dedicated to transforming the culture of undergraduate biology education to effectively meet the needs, desires, and goals of Black students. In discussing its design and implementation, we examine how the space functions as a counter-space for Black students and professionals, offering the resources and community necessary to support their holistic well-being and positively influence their motivation and engagement.

• Research Question:
  • To what extent does the Re-Envisioning Culture Network serve as a counter-space for Black STEM students and professionals?
Research Design

• Critical Race Methodology (Daniel Solórzano & Tara Yosso, 2002)
  • Foregrounds racism and race.
  • Challenges traditional research paradigms and approaches.
  • Offers a liberatory or transformative solutions.
  • Focuses on the raced-gendered-classed experience of racially minoritized individuals.

• Data
  • Survey
  • Artifacts
  • Video Transcripts

• Analysis: Thematic Coding
Re-Envisioning Culture Network

• Diverse, mixed-powered, multigenerational network.
  • 69% Students, 31% Professionals
    • 90% Black
    • 90% 17 – 22 YO, 10% 23+
    • 38% 1st Generation, 15% Transfer
    • STEM Faculty, Administrators, STEM Professionals, Teachers, DEI Professionals, Black Cultural Artists
  • 22 States

• Purpose: To identify, propose, and provide strategies and practices that retain Black undergraduate students in the Biological Sciences through graduate and professional career endeavors by centering, celebrating, and embracing Black culture.

• Activities:
  • Annual Conference
  • Small Topical Conversations
  • Writing Group
  • Repository - https://qubeshub.org/community/groups/recnetwork
Re-Envisioning the Culture Centering Blackness

**Roots**
- Disrupting conceptions of Normality.
- Challenging values regarding scientific knowledge generation and dissemination.
- Expanding beliefs about what is ethical and moral.
- Interrogating models of success.

**Mediums**
- Content
  - Problems, Processes, & Solutions
- Pedagogy
  - Philosophy, Strategies, & Tools
- Assessments
- Classroom Ethos/Management

**Centering Blackness**
- Curating and disseminating existing teaching and research-focused resources that center Blackness from a critical, strengths-based approach.
- Freedom Dreaming through Afro-Futurism/ Black Speculative Fiction to create materials.
Re-Envisioning Culture Network: A Syllabus Guide

**Stage 1: Desired Results**

- **Stakeholders:** Students will be able to independently use their learning in...
  - Identify key issues in their community, research the proper care for the issue including well being, amount of waste, open space, and impact, and impact the tree lives in the air quality. They will be able to connect Wangari's story with their own community.

- **Social Impact:** Students will understand that...
  - Wangari is the one who teaches, and her story will inspire her community, and have an impact.
  - How Wangari's story has impacted her community.

- **Essential Questions:** What we do to the environment impacts our lives in everyday life. How do we make changes to protect our environment?

- **Assessment:** Students will be able to...
  - Explain their role in their community and take action to protect the environment.
  - Explain the importance of the environment and the effects of pollution on human health.

**Stage 2: Evidence and Assessment**

- **Evaluation Criteria:**
  - Knowledge of Wangari Maathai's work in her community.
  - Ability to identify and take action on environmental issues.

- **Assessment Evidence:**
  - Participation in community events focused on environmental issues.
  - Written reports on the impact of their actions.

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**About**

The Re-Envisioning Culture Network Syllabus aims to honor Black identity and culture while acknowledging the barriers that Black undergraduate students face through definitions, art, storytelling, and poetry. We invite those who read this syllabus to learn more about the terms, research, and experiences around Black social identity, an international gender identity, and Black culture within the United States. This is not an exhaustive list but hopefully a small step to your journey towards understanding.

**Team**

- Alex E. Hunter
- Ashleigh McIlveen
- Cora S. Wright
- Faith Daniels
- Wren Stevens
- Allie C. Atkins
- Brij Shroff
- Lydia B. Merrick
- Mark Nelson
- Michelle Williams

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**What beliefs would hold true in UBE as we reimagine what it would be like in the future? (stem from our experiences, feeling that something is true)**

- That success is more than just high scholastic performance (for students) publications (for scientist) and reports on teaching (for educators)
- The expansive nature of learning and how it does not only take place in the classroom and the bench, which would then inform how we construct knowledge and engage knowledge.
- There are infinite valued paths (no hierarchy of value?)
- The applied nature of the biological sciences is equally important and worthy as the "pure" notion of the biological sciences
- Factoid approach to "knowing biology" isn't the only way to show that one "knows" or is successful in biology

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**Black in Bio Facts:**

Roger Alinear Young was the first African-American woman to receive a doctorate in zoology, after years of juggling research and teaching with the burden of caring for her invalid mother. Her story is one of grit and perseverance.

- You know her story: 42.9%
- You don't know her story: 57.1%
Being Unapologetically and Brilliantly Black

• REC Network events were seen as spaces where Blackness was centered:
  • **Question:** ...did you have a particularly impactful experiences stemming from your participation in the REC Network? **Response:** Being part of a community that is unapologetically critiquing the anti-Black culture and climate in STEM, and centering transformative change, not incremental fixes.

  • I just LOVED to be in a space where Black voices and experiences were being centered. Learned a lot.

• The Rec Network (re)invigorated Black professionals and students:
  • There was a strong level of connectedness that occurred within my group. Our discussions were hard and honest, but steeped in hope for greater teaching and learning outcomes. There was a level of vulnerability that I'd yet to experience in a virtual space. I appreciated that most were ready and willing to engage in critical conversations.

  • **Question:** What unanswered questions do you have for the REC program team? **Response:** How can I become more involved with you all? I really enjoyed myself and I want to help, uplift, and connect with other black students in my field.
Fostering Onto-Epistemological Reciprocity

• The Rec Network provided space where Black students could learn from others, contribute their expertise, and help envision a future:
  • The greatest personal outcome for me was being able to connect my daughters (both STEM undergrads) to people and resources I connected to within the collective. It has been a joy to see them build community by way of the opportunities for research, internships, and conferences with their peers, all because of the REC Network.

• As an undergraduate scholar I often feel excluded [in conversations about] our needs, all members in my group as well as the main stage were very supportive. I thoroughly enjoyed the conference and cannot wait to begin doing the work.

• The activity I found the most impactful were those where the discussion was mostly based on the Black culture. I am a person who is so strong about the Black community, as we have been labeled members of the disadvantaged community which ought not to be so. I found my shy-self becoming so outspoken on issues pertaining to this topic. Also, building a career in science field, I was enlightened on the steps needed to achieve my goal.
Discussion

• Centering of Black onto-epistemological experiences and understandings from a critical, strengths-based approaches.
  • Black undergraduate and graduate students as thought and implementation leaders and partners.
  • Afro-Futuristic Framing.

• Multiple ways to foster virtual engagement and community building (i.e., synchronous virtual meetings, social media, web-based online community).

• Facilitating space for Black students and professionals to both share and develop community cultural wealth.
  • Aspirational → Enthusiasm to “do the work” towards transforming the culture.
  • Familial/Social → Relationships established among participants.
  • Navigational → Resource exchange (i.e., strategies, jobs, internships, scholarships, PD, etc.)
  • Linguistic → Embodied cultural communication exchanges.
  • Resistance → Unapologetic centering of Black beauty, art, joy, needs, desires.
Implications and Future Directions

• The days of superficial, additive “DEI” initiatives are done. Black STEM learner (e.g., students, professionals) deserve educational spaces that intentionally refute the anti-Blackness.
  • Moving away from “needing” counter-spaces to maintaining critically reimagined learning spaces, curriculum, and content that incorporate and leverage collective, multigenerational, mixed-powered funds of knowledge.

• Both Black justice and Black joy can be centered and facilitated in STEM learning spaces...and these experiences can be virtual through the intentional use of a various mediums.

• Future Directions:
  • Examining “long-term” possibilities of sustained Black Centric STEM learning environments and curricula materials on Black and non-Black students’ success, engagement, and matriculation.
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