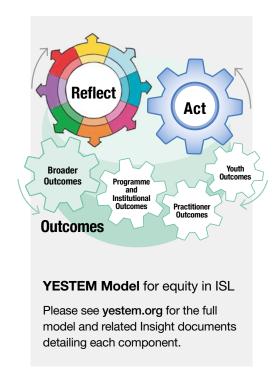# Critically Being With

YOUTH EQUITY + STEM

YESTEM Insight #2.6

What is the issue?

- Youth bring different lived histories and experiences into learning spaces. These histories and experiences are shaped by social structures and identities such as race, gender, socioeconomic and linguistic status, culture, and class.

- If informal STEM learning (ISL) environments value White, Western, masculine culture more than others, then the worldviews and lived experiences of many youth are easily sidelined. This can make daily ISL discourses and practices oppressive, instead of empowering and expansive.

YESTEM Model for equity in ISL

Please see **yestem.org** for the full model and related Insight documents detailing each component.

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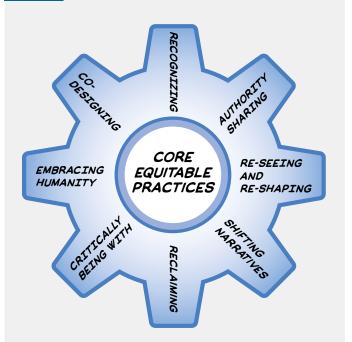
What is the practice?

When we are "Critically Being With", we are making a choice to meet someone where they are, instead of expecting them to meet us where we think they should be. This practice goes beyond daily check-ins and content scaffolds. Critically Being With is a relational and ethical practice to foreground the present experiences of youth. This shifts relationships and insights by humbly moving towards common ground with youth.

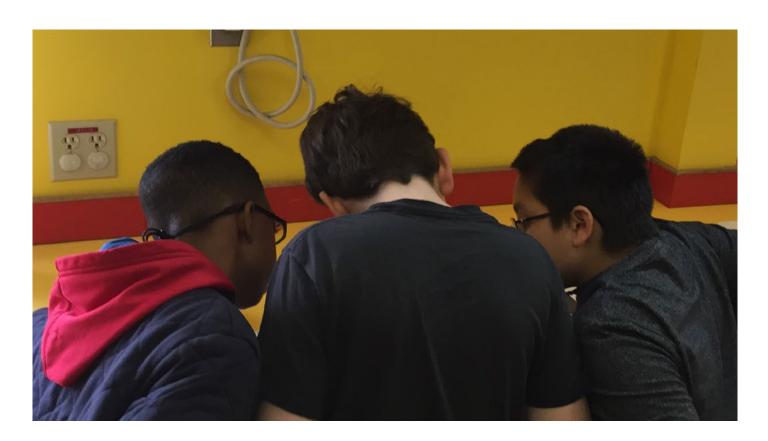Educators can Critically Be With youth in many ways:

- Giving witness to how youth experience historical and systemic racism on a daily basis (including inequality in informal science) by:
  - Attending to narratives youth share about the conditions and contexts of their lives,
  - Learning about existing structures of ISL and who designed/who still directs them,
  - Learning how ISL can either reproduce or disrupt oppressive/exclusionary norms, routines, practices, and ways of speaking.
- Making space *with* youth for youth-valued meanings, understandings, practices, and social futures.
- Recognizing and supporting the ways youth are already working to make visible/disrupt/transform injustices within and beyond the ISL space.

Act

The practice of Critically Being With is about meeting youth where they are and seeking ways to honor and center their experiences and contexts. It means making space for the complex ways youth live their lives, including how they may have experienced ISL in oppressive ways because of their race, gender, language and sexuality.

Visit **yestem.org** for more information and resources from our international research effort.

Creating space for youths' experiences with racism in STEM-rich making (US)

In this vignette we show how one educator, Taylor, created a welcoming space for a youth, Nila, to share her experiences with racism, and then supported youth in organizing their makerspace activities in ways that disrupted racism. Taylor's purposeful decision to make the activity central to the makerspace reflected her desire for youth to be seen in STEM in ways of their choosing. This practice led to creating a visible, enduring presence of youths' racialized lives in that space.

Taylor began a session by asking if youth had stories or experiences they wanted to share. Nila shared her worry that racism was creeping into all aspects of life, that racism was "getting worse," and that this was stressful and exhausting for her. Nila's comment was greeted with animated agreement as other youth called out their own concerns about racism. Taylor noted that "youth wanted to have discussions of race". While this felt like a contentious moment, she also noted that this was a part of the youths' realities.

As Taylor opened a space for the youths to share their stories, the group talked about racism at school, on the bus, and at the grocery store. Taylor encouraged the youths to ask each other questions, and to really listen to each other's stories.
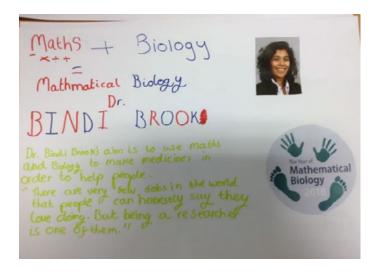
She explained later:

"What I hear from the youth is, 'This is how I'm navigating my blackness, my brownness, my whiteness within the context of my middle school experience. This causes me to perform in particular kinds of ways. I cannot be my full self in K-12 but I can be my full self here.'... They know right now ain't right. They are having to do this stuff as they are acknowledging problems and designing solutions in STEM."

Taylor gave witness to Nila's concerns by sharing her own experiences with and feelings about racism, as a Black woman. She bore witness to collective injustice, grief, and anger, acknowledging that honoring the fullness of youth experiences in and out of STEM, the good and the bad, is a part of honoring youth efforts to reimagine what can be possible in STEM.

Next, Taylor directed the conversation towards their makerspace activities by asking, "So what does Nila's story about racism tell us about our projects? Like, how could this help us with our projects?" The critical talk on racism created new opportunities for Nila and her peers to think about how they could use STEM in ways that disrupted injustices like racism. Nila and a couple of her peers documented where, when and how people in her community experienced racism, brainstormed possible strategies for combating racism in her community, and ultimately designed and built a light-up #StopRacism sign now displayed on the wall of their STEM Club. In addition to youth using the sign to call attention to racism, they also used the sign in support of their own maker efforts. For example, youth often pulled the sign out to examine the circuits Nila constructed. They also put the sign near the front of the room, with its lights on when visitors came.
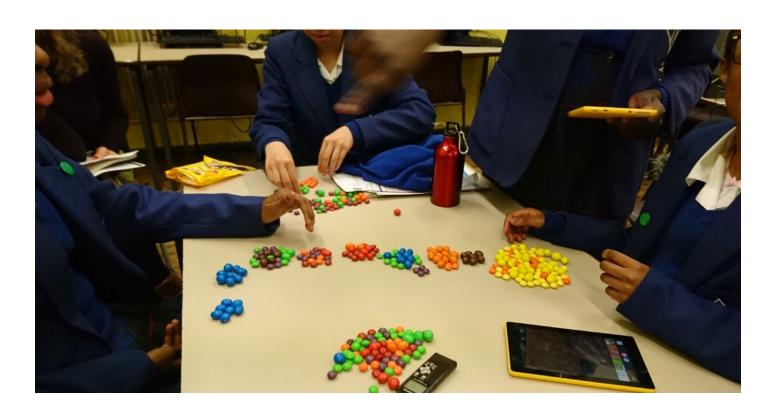
Cole, an educator at the community zoo, acknowledged the importance of not shying away from potentially challenging conversations, such as **"not being afraid to say the word Black or gay."** Cole shared with us how often, in his experience, people would be reluctant to put a label on people, saying "people would whisper things to me, like 'he has two mums'". In response, Cole advocated for the importance of destigmatizing how we talk about race and sexuality. During the week-long zoo program, Cole gave witness to young people's difficult experiences, such as school bullying, economic hardship and religious discrimination.

Critically Being With can be a challenging practice for a novice educator and/or for educators who may not have personally experienced marginalization. During an after-school STEM club, Madison, a young White woman educator, played a YouTube trailer for the film Hidden Figures (about Katherine Johnson, a Black woman computer scientist). When one of the Black young women participants realized that Katherine Johnson was Black, she exclaimed with surprise (**"Oh, she's Black!"**). While the conversation moved to a different topic at the time, Madison later reflected on the significance of the moment and the **potential it had for the young women's engagement with STEM and for disrupting oppressive norms,** particularly as she found out later that none of the young women had previously known of any Black (and female) STEM professionals. She noted in a later interview that she "would like to have gone back 'cause that was a really, really lovely moment and I would have definitely encouraged them all to lead a discussion". This moment also instigated a further shift in Madison's practice as she admitted that "the [activities] they did were mainly about white women". Following her moment of reflection, Madison decided to find out more about how to engage with issues of injustice in her practice, paying particular attention to how she might foreground intersections of gender and race and support young people to engage with injustice and representation in STEM.

How to use this practice: Reflect

Reflection questions

1. What are some ways in which you have created opportunities to Critically Be With the youth in your programs?

In what ways have you observed youth Critically Being With each other?

Were these moments spontaneous or planned for?

What structures and activities supported Critically Being With?

2. What challenges do you face in making space to Critically Be With youth? To support youth in Critically Being With each other?

What do you need to know about youths' lives and communities to more fully and critically be with youth?

3. What obstacles need to be addressed to support your enactment of the practice of Critically Being With?

Who would need to be invited to planning sessions and after-session reflections?

How to use this practice: Act

Things to do

1. Off-Task Amazing

Make sharing ideas that may seem "off task" a normal part of your program so youth can comfortably express their thoughts and share their experiences.

Off-Task Amazing is when you notice a youth is "off task" but when you look closer you also notice they are doing something amazing that everyone can learn from. Some strategies for sharing are:

- Think-pair-share
- Index cards/post-its on a poster
- Regular 5-minute start-of-session and/or end-of-day youth report-outs

2. Attend to and discuss issues youth react strongly to, especially if those issues feel politically charged

For example, if youth fear fingerprints based on abusive law enforcement practices, make space to critically discuss uses of "objective" STEM tools to unjustly target communities of Color, etc.

3. Prioritize making connections between program activities and personal experiences and contexts by using program time to discuss:

- How youth engage with the daily session goals
- How youth see connections between peers' ideas, program experiences, and daily life ("How do we all feel about that idea? Why do we feel or think that way?")

4. Take a "sensory inventory" of learning spaces

- How does the design of a space shape how youth feel? Knowing this will help to pinpoint often-overlooked stimuli that could become bummers, sources of irritation/frustration, or distractions for youth (machinery droning, boring grey color schemes, etc.)
- Ask youth to do a sensory inventory as well.
- Combine all that data and brainstorm solutions together to improve the learning space.

5. Model using questions to support critical reflection about session activity

"What challenging thing did I learn today?"; "What were my high and low moments of the day? Why?"; "What are curious questions I have that are lingering from today's experience?"

Additional tools and resources

Try out some "Talk Moves"

Talk moves can help to create space and time for Critically Being With. Other moves can be used to ask for youth to unpack their critical ideas and practices so that they can be made public and expanded.

Create space and time for Critically Being With

- "If you could make today's activity (or this program) different, what would you change?"
- "What was your biggest challenge in design/ making projects? Why?"
- "How do your projects connect to your life or someone else?"
- "What connections did you make with today's activity [or this program] and your life?

Ask for youth to unpack their critical ideas and practices

- "What are some things we do here that help you feel like you belong? What are some things you wish we would do?"

- "That is powerful. So you mean that ....?"; "Oh, so your point is this ......?" [Writing down youths' ideas on the white board]
- "So what does Nila's story about racism tell us about our projects? Like, how could this help us with our projects?"

Example tools from educators

- **Reflection notes:** Incorporate (into your daily practices) noticing and recording the instances, conversations, and actions that call for changes in discourse, norms, and practices.
- **Creating a space to share critical noticing** (e.g., posters, post-its) in which youth express their thoughts, questions, and critiques, which will continuously be discussed and referred to across sessions.
- **Conversation group with other educators:** Engaging with other educators to collectively reflect on the moments in which youth called for changes in power relationalities and/or raced narratives and reimagining how they would support youths in their future program sessions.

About our project

- Over four years, our project involved researchers, ISL educators and young people working in partnership to develop new understandings and insights about how ISL might better support equitable outcomes for young people aged 11-14 from minoritized communities.
- Our project partnership involved data collection in the UK and the USA with partners in two science centres, two community STEM clubs, a zoo and a digital arts centre.
- Overall, 260 young people and 30 practitioners took part.
- In the wider project we also conducted surveys with 2,783 young people.

For the full range of Insights documents summarizing the project's tools and resources, including Core Equitable Practices and Equitable Youth Outcomes Model, please see **yestem.org**

yestem.org

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