

Visions Week 2: Improving School Climate for LGBTQ+ PK-12 Students



Image Description: Street art mural in Newark NJ by 7ovechild. The mural depicts how the artist “sees the rainbow” of pride. To the left of the mural is a feminine person with blue hair on a gold dress. To the right of the person is a pride flag. Next to that is a group of diverse young people, many of whom are wearing rainbow colors or holding queer pride flags. The mural says Pride 21.

Image Source: [Muse by Clio](#)

Welcome back! We will begin shortly. Until then, sit back and enjoy the music.



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Image Description: Image of a child wearing a shirt that says "love who you are." The child is striking a "superman" pose and is looking up.

Image Source: [Unsplash: Sharon McCutcheon](#)

This Is A Brave (Not Safe) Space

- *Controversy with civility*, where varying opinions are expected with a group commitment to understand the source of disagreement & work together toward a common solution.
- *Owning intentions & impact*, in which we acknowledge & discuss instances where dialogue has affected the emotional well-being of another person
- *Challenge by choice*, where we have an option to step in & out of challenging conversations
- *Respect*, where we show respect for one another's basic personhood
- *No attacks*, where members agree not to intentionally inflict harm.

So We Will

- Work collaboratively
- Be provocative yet caring
- Feel "comfortably uncomfortable"
- Extend grace to ourselves and others - we won't expect perfection
- Embrace cognitive dissonance
- Center calm and healing

Source: Brian Arao & Kristi Clemens's "[From Safe Spaces to Brave Spaces](#)" (2013)



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Breakout Rooms

- 1) What came up for you as you were reviewing your (or another) state snapshot? (e.g., what feelings, thoughts, or questions came up? What surprised you and what didn't?)
- 2) How do we improve school climate for LGBTQ+ students in PK-12 schools?



Image Description: Image of a street art mural "You are Loved" in NYC from 2019 World Pride. Mural depicts black and white cartoonish renderings of four trans people. Between each pair of people is a word: "You" "are" and "Loved" in, in pink and boxes w/black writing and outline. There are pink, white, and blue raindrops coming from each of the boxes as well.

Image Source: [QueerStreetArt.com](https://www.queerstreetart.com)



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Improving School Climate for LGBTQ+ PK-12 Students

- GSAs (Gender Sexuality Alliance)
- Anti-bullying policies
- Non-discrimination Policies
- Elimination of Zero Tolerance Policies
- Re-evaluating School Dress Codes
- Gender Inclusive Bathrooms, Locker Rooms, and Policies (PE, sex ed, etc)
- Staff/Faculty Allies and PD for Staff/Faculty
- LGBTQ+ Inclusive Curricula and Pedagogy

Sources:

Mollie Blackburn & C.J. Pascoe's "K-12 Students in Schools" in [LGBTQ Issues in Education: Advancing a Research Agenda](#) (2015)
Learning for Justice's [Best Practices for Supporting LGTO Students](#) (2018)



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Image Description: Street Art Mural “Fight for Street Art” by Kobra, Bedford Ave., Brooklyn, NY. Mural Depicts Jean Michel Basquiat & Andy Warhol wearing boxing gloves over a backdrop of multicolor geometric shapes.

Image Source: [Eduardo Kobra Street Art](#)

The State of Queer Inclusive Curricula in PK-12 Math

- Students are *least likely* to report seeing positive representations of LGBTQ+ topics in math (only 3.6% of those with inclusive curricula reported such representation in math) (Kosciw & colleagues).
- Many math problems are still presented with the assumption of a gender binary or heterosexual pairings (Esmonde; Rubel; Yeh; Parise)

Sources:

Indigo Esmonde's "[Snips and Snails and Puppy Dogs' Tails: Genderism and Mathematics Education](#)" (2011)

Kosciw & colleagues' [2019 National School Climate Survey: The Experiences of Lesbian, Gay, Bisexual, Transgender, and Queer Youth in our Nation's Schools](#) (2020)

Laurie Rubel's "[Speaking Up and Speaking Out about Gender in Mathematics](#)" (2016)

Cathery Yeh's "[Sex, Lies, and Word Problems](#)" (2017)

Megan Parise's "[Gender, Sex, and Heteronormativity in High School Statistics Textbooks](#)" (2021)



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But Does it *Really* Matter in Math?

YES

- In undergraduate studies, fewer LGBTQ+ students pursue STEM majors than non-LGBT students (Greathouse & colleagues)
 - Fewer LGB students go on to persist in their STEM majors than non-LGB students (Hughes)
- LGBTQ+ students are less likely to complete Algebra II than non-LGBTQ+ students, which “is particularly relevant given..algebraic understanding is gateway material to both college and a successful career” (Whipple)
- At least one study has indicated that supportive LGBTQ+ school environments relates to “stronger mathematical identity” (Fischer)
 - This is consistent with my own experience as a queer individual

Sources:

David Fischer's [Out 4 math: The intersection of queer identity and mathematical identity](#) (2013)

Maren Greathouse & colleagues' [Queer-spectrum and trans-spectrum student experiences in American higher education: The analyses of national survey findings](#). (2018)

Bryce Hughes's " [Coming out in STEM: Factors affecting retention of sexual minority STEM students](#)." (2018)

Kyle Whipple's [LGBTQ secondary mathematics educators: Their identities and their classrooms](#). (2018)



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Dimensions of Rehumanizing Mathematics

- **Participation/Positioning** - “recognizing hierarchies in classrooms & society & shifting the role of authority from teacher/text to other students”
- **Cultures/Histories** - “acknowledges students’ funds of knowledge, algorithms from other countries, the history of mathematics, & ethnomathematics”
- **Windows/Mirrors** - “students come to see themselves in the curriculum & also others or a new way of viewing the world”
- **Living Practice** - “mathematics [is] something in motion...[it] is a verb rather than a noun”
- **Broadening Maths** - “expanding views of mathematics to make room for other forms of mathematics [outside of that traditionally taught in K-12 schools] that can allow students to see more qualitatively”
- **Creation** - “encourage students to invent new algorithms or forms of doing mathematics that are consistent w/their own values”
- **Body/Emotions** - “invite[s] students to draw upon the other parts of themselves (e.g., voice, vision, touch, intuition)... encourage[s] [students] to be more in tune w/themselves & less likely to succumb to pressures to ignore their senses & ‘just pretend’ in order to do mathematics”
- **Ownership** - “when students view mathematics as something one does for oneself, not for others”

Source: Rochelle Gutiérrez’s “[The Need to Rehumanize Mathematics](#)” (2018)



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Breakout Rooms: LGBTQ+ Inclusive Math Curriculum

LGBTQ+ inclusive math curriculum refers to math curricular materials that provide LGBTQ+ representation, avoiding the presentations of solely heterosexual pairings, male/female binary of gender, normative gender roles, and so on. Kai Rands calls this *add-queers-and-stir*

Middle and HS Examples:

- [What's a Fair Living Wage?](#) (Harper)
- [Mining Data](#) (Garden State Equality)
- [Listen to GLSEN](#) (Bryan Myer and John Staley)

Discussion Qs:

- How does this example differ from that of the blog post?
- What strengths (mathematical, pedagogical, social) do you see in this example? The example from the blog post?
- What are the limitations (mathematical, pedagogical, social)? The example from the blog post?
- What dimensions of rehumanizing does this address? The example from the blog post?

Sources:

Francis Harper's "[Lesson 6.6: What's a fair living wage?](#)" (2020)

Bryan Meyer and John Staley's "[Lesson 5.3: Listen to GLSEN.](#)" (2020)

Kai Rands' s "[Mathematical Inquiry: Beyond 'add-queers-and-stir' elementary mathematics education](#)" (2009)

Garden State Equality's "[Mining Data](#)" (n.d.)



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Breakout Room 1 Notes

The Mining Data problem is more focused on the specific population, so language might be an issue. The openness of the Babylon problem may help prevent oops and ouch moments. The strengths of both are that they are clearly inclusive, require students to think about LGBTQ+ folks. The Babylon problem has many access points. The Mining problem is more narrow.

Both problems may build on the funds of knowledge of LGBTQ+ students' real lived experiences

- What strengths (mathematical, pedagogical, social) do you see in this example? The example from the blog post?
- What are the limitations (mathematical, pedagogical, social)? The example from the blog post?
- What dimensions of rehumanizing does this address? The example from the blog post?



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Breakout Room 2 Notes

Listen to GLSEN was very heavy math focused- allows for learning math through the social justice data

- Limitations: wondering if the last lesson (3) would have a risk of being seen as an “add-on” - might be better to sprinkle elements of it throughout first two lessons
- Like that the reflective questions targeted more than the computational element
- Interrogating math (philosophical) vs use lived experience to explore math



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Share Out

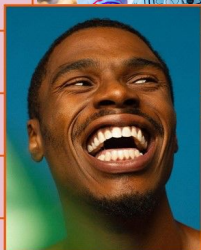


Image Description: Collage of BIPOC, disabled, ELLs and queer folx in various states of joy



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Creative Insubordination

In choosing to use Creative Insubordination, we are refusing the status quo when it is not in the best interest of our students. This means questioning some of the typical norms in mathematics teaching and learning. An important step in this work is first deconstructing what is going on around us, making the “normal” seem abnormal. For example, do we notice that the students in our calculus classes do not represent the demographics of our school? Only then can we imagine and plan for a different possible future where that representation is present.

Teaching mathematics involves negotiating one’s practice with colleagues, parents, administrators, students, and at times, community members. Choosing to refuse the status quo is an important option for maintaining our sense of morals, especially given the fact that we will never please all of the aforementioned constituents at the same time. Having political clarity on why we are doing the things we do is important...

Source: Rochelle Gutiérrez’s [“Strategies for Creative Insubordination in Mathematics Teaching”](#) (2016)



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Heteronormativity & General Normativity

Heteronormativity “is [the] societal assumption of certain norms: 1) that there are two distinct sexes; 2) that male and female functions and characteristics are distinctly different; and 3) that traits such as attraction and sexual behavior correspond to anatomy. Those who do not fit these norms—be it through same-sex attraction, a non-binary gender identity or nontraditional gender expression—are therefore seen as abnormal, and often marginalized or pressured to conform to norms as a result.”
“(Learning for Justice)

Normativity “is the phenomenon in human societies of designating some actions or outcomes as good or desirable or permissible and others as bad or undesirable or impermissible.” (Wikipedia)

Sources:

Learning for Justice's [Best Practices for Supporting LGTQ Students](#) (2018)

Wikipedia's [Normativity](#)



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Queerness as Resistance

Queerness as resistance to normativity, which includes queer identity (resistance to heteronormativity) but also:

Different ways of knowing, doing, & being in the world & in mathematics



Image Description: Rainbow Pride flag with a circle in the center. The circle has the backdrop of the transgender flag colors and has a "resistance" fist of multiples shades of black and brown

Image Source: [Emory Uni Blog Post: Queer Punks & Radicals](#)

Resources for future reflection (math-specific): [Alexander S. Moore](#), [Brandie E. Waid](#), [Cathery Yeh + Brande M. Otis](#), [Christopher Dubbs](#), [Heather Mendick](#), [James Sheldon](#), [Kai Rands \(1 / 2\)](#), [James Sheldon + Kai Rands](#), [Luis Leyva](#), & [Mario I Suarez](#)



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What does this look like in math????

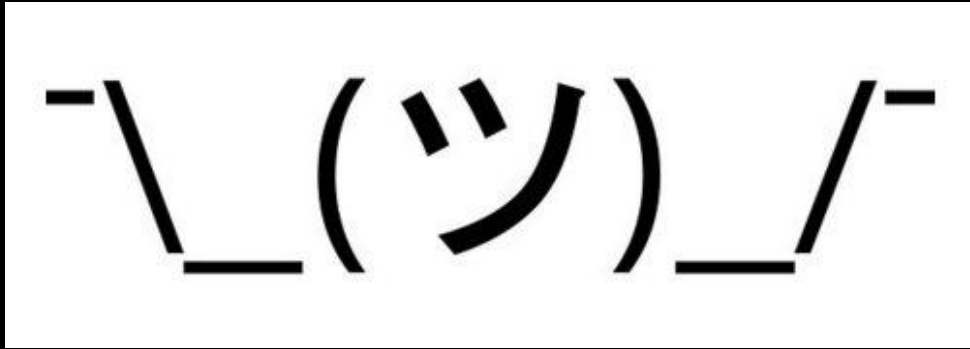


Image Description: *Shrug emoji*
Image Source: [HubSpot](#)

Mathematical Inqu[ee]ry is about “questioning the tasks, the strategies, the very ways of thinking and doing mathematics as well as the way mathematics is used to interpret and act in the world” (Rands)

Sources:
Kai Rands’s “[Mathematical Inqu\[eel\]ry: Beyond ‘Add-Queers-and-Stir’ Elementary Mathematics Education](#)” (2009)



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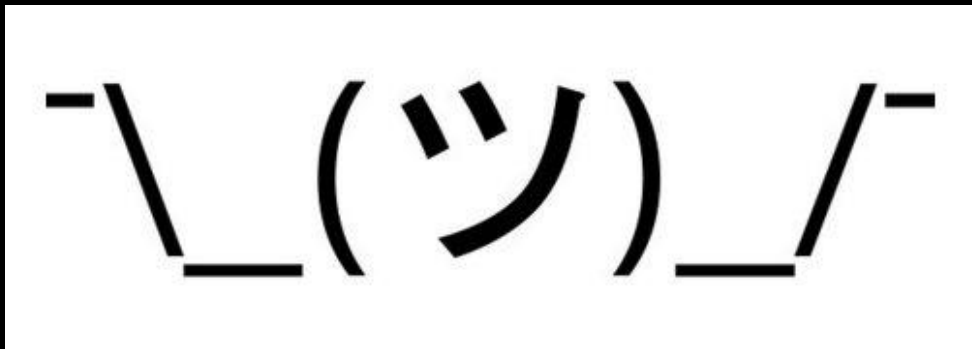


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Developing Border Consciousness - “Identity is developed through reclaiming histories of marginalization and violence, articulating oppression’s gendered and heteronormative elements, and embracing the fluidity of borders – a concept Anzaldúa (2007) describes as *border consciousness*. We propose that mathematics educators be given and take the space to develop this kind of border consciousness, by interpreting and assessing the ways that gender and sexuality norms are relegated and naturalized by the contextualized realities made available in mathematics curriculum.” (Yeh & Rubel)

Source:
Yeh and Rubel’s “[Queering Mathematics: Disrupting Binary Oppositions in Mathematics Pre-service Teacher Education](#)” (2020)



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Applications of Queer Pedagogy in Mathematics

Developing
Border
Consciousness
(Yeh & Rubel)

Mathematical Inqueery (Rands)

Problem Posing

Cross Disciplinary
Questions
(Waid & Turner)

Sources:

Kai Rands's "[Mathematical Inqueery: Beyond 'Add-Queers-and-Stir' Elementary Mathematics Education](#)", (2009)

Yeh & Rubel's "[Queering Mathematics: Disrupting Binary Oppositions in Mathematics Pre-service Teacher Education](#)" (2020)

Waid & Turner's "[Inqueery across the Curriculum](#)" (2021)



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Source: Brian Arao & Kristi Clemens's "[From Safe Spaces to Brave Spaces](#)" (2013)



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Image Description: Image of a street art mural "The Love I Vibrate" in Boystown Chicago. Mural depicts a queer, Black, masculine presenting person on a multicolored backdrop.

Image Source: [CODAwork](https://www.codawork.com/)

Debrief

What are we thinking/feeling in relation to what we discussed today?



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Preparing for Next Session (Nov 2nd)

- Read:
 - Yeh & Rubel's "[Queering Mathematics: Disrupting Binary Oppositions in Mathematics Pre-service Teacher Education](#)" (2020)
 - Rochelle Gutiérrez's "[Strategies for Creative Insubordination in Mathematics Teaching](#)" (2016) - Go to pg. 52 of the linked doc.
- Share your [feedback](#)!