Mathematics Teacher Leaders' Responses to Equity in Turbulent Times

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Abstract

Historically, the task of reforming the political, economic, social, and culture systems that maintain White dominance and non-White subjugation has fallen on BIPOC communities. However, justice means that those who are from the dominant White class–those who are in positions of power–need to "sweep outside" their own front door and take action to disrupt these inequitable systems. In this article, we aim to show how K–12 mathematics teacher leaders and district leaders use their power to respond to equity. Drawing on a larger set of K–12 mathematics teacher leader interviews, we used poetic transcription to emphasize their noticings related to social unrest during the first year of the COVID-19 pandemic. Reflecting the demographics of educators in the U.S., all participants were White and thus their reflections provide insight into how White educators in power may respond to inequity, including the tensions they grapple with and the ways they choose (or do not choose) to move beyond inaction. Our findings suggest that district leaders and teacher leaders can exercise their power to challenge systems of oppression pervasive in mathematics education, particularly by addressing their peers' deficit thinking toward students and in eliminating systems of tracking.

Discussion And Reflection Enhancement (DARE) Pre-Reading Questions

1. What challenges do teachers face in trying to make their classrooms and districts more equitable for mathematics teaching and learning?

2. When people talk about "closing equity gaps" or use phrases such as "high student" or "low student," what do they mean? How do you respond?

3. How did the 2020 dual pandemics of COVID-19 and racial violence influence your school/district/institution's discussions of equity?

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Mathematics Teacher and District Leaders' Responses to Equity in Turbulent Times

Kelsey Quaisley, Rachel Funk, and Wendy Smith

Introduction and Purpose

This work exists within the context of the United States of America (U.S.), which has a long historical record of White supremacy enabled explicitly and implicitly by multiple systems (e.g., housing, healthcare, legal, education). Historically, the work to change these systems has been spearheaded by those who have been oppressed by these systems. But it is unjust for BIPOC (Black, Indigenous, People of Color) communities to shoulder the full burden of equity work. White folx need to be responsible activists who hold systems and themselves accountable for historical harm. Specifically, White people who engage in racial justice efforts need to stop focusing on saving People of Color, and instead focus on themselves:

> White folx who do the work of racial justice need to get their people because Black folx are tired. And it's not our job to save White people from Whiteness…as Patty would say, 'sweep outside your own front door.'...White people need to stop trying to save Black people; instead, they need to focus on saving themselves. Black people don't need saving. We need the removal of the institutional barriers that prevent, stop, and aim to kill Black progress, Black freedom, and Black joy. We need White people to love themselves--enough to let go of their need for power and conquest that is killing them and their children, enough to stand up to the super predators who tell them lies to keep all of us oppressed, and enough to take responsibility for their community. (Love, 2023, pp. 240-241).

For White people, taking responsibility necessitates being vulnerable, emotionally and epistemically, to the reality of one's own privilege in society (Applebaum, 2017; Gilson, 2011). Such responsibility involves being vulnerable and empathetic to the experiences of those who have been marginalized, being open to changing one's beliefs, and having the courage to take action to subvert cultural norms and structures that uphold inequity. But those in positions of power can find it challenging to be this vulnerable. DiAngelo (2018) introduced the notion of "White fragility" to describe the defensiveness that White individuals typically display when confronted with evidence of racism. Furthermore, White individuals who acknowledge systemic inequities often position themselves as powerless to disrupt these inequities (Dancy & Hodari, 2023). In one study, Dancy and Hodari (2023) interviewed 27 White men in physics who expressed an interest in equity but took no action to dismantle their own privilege. As scholars, we are interested in knowing how to support White people and other people in positions of privilege to move beyond guilt and into action to disrupt inequities in education (DiAngelo, 2018).

Gutiérrez (2009) notes that "equity is ultimately about the distribution of power" (p. 5). Teacher leaders are key power brokers in education, and predominately White. Thus, teacher leaders are well positioned to engage in equity work, but this work requires that they confront White fragility and their discomfort to move towards action. Research has shown the potential for teacher leaders to support equity in schools (e.g., Jacobs et al., 2014). Even though little has been published about research on mathematics teacher leaders' impacts on school equity (Baker et al., 2024), a body of research focuses on individual teachers' efforts to enact equity or social justice in their classrooms (e.g., Gutstein, 2016).

In this study, we share a poetic analysis of the emotions and actions displayed by leaders in mathematics education in response to the inequities that the COVID-19 pandemic helped to illuminate. Notably, the final draft of this paper was

written in 2025 as attacks on equity work are accelerating within the U.S. Although such efforts have always been under attack, the level and scope of these attacks is significant and likely to get worse. Effectively addressing systemic attacks requires the work of White allies and the marginalized communities under attack; White allies must ensure they are approaching the work in a humanizing and authentic way, not swooping in as "White saviors" but instead listening to needs and using power and privilege to help leverage common solutions.

In this paper, we aim to show how teachers and district leaders—all coming from relative positions of power—challenge systems of oppression, i.e., "sweep outside [their] own front door[s]." (Love, 2023, p. 240). We center the voices of teachers and district leaders who reflect on the critical axis (Gutiérrez, 2012) in their work to support equitable mathematics learning (Cintron et al., 2021). Further, we showcase how they respond to systemic inequities in their school systems as a means of generating further discussion and understanding of the tensions they grapple with and ways they feel empowered to move beyond inaction.

Although we focus on teachers' and district leaders' responses, we highlight the ways in which they attended to and interpreted the broader social contexts of their work, including how the pandemic and social unrest have differentially impacted students, their families, educators, and communities due to racial and socioeconomic dynamics. DeBray et al. (2023) note the differential impacts of the pandemic and implications of educational policy: "Education policy must address the toll of the pandemic on our educational system broadly, as well as the racial and socioeconomic segregation that exacerbated the impact of the pandemic on students, educators, and the overarching system" (pp. 4-5). Just as broader social contexts are vital to education policy, broader social contexts are also vital to teacher leaders' responses to equity. We expand the literature on mathematics teacher leaders' impacts on equity by investigating and expressing teacher leaders' responses toward issues of equity arising from (and highlighted by) the COVID-19 pandemic and the social unrest surrounding the death of George Floyd, among others. To this end, we explore:

> *How did mathematics teacher leaders and district leaders respond to concerns surrounding equity within the dominant and critical axes of equity (Gutiérrez, 2012) during a global pandemic and social unrest?*

Collective Positionality

We are three White women with varied experience in mathematics teaching and education research. We value collaboration, conversation, dialogue, and emotion. These values guide how we teach, how we work together, and the research methods we choose. In our teaching and our research, we aim to understand, humanize, and question with curious criticality the perspectives held by students, participants, and ourselves. All three of us have taught mathematics at the tertiary level, and one was a secondary teacher leader. We all have experience facilitating conversations about equity and racial literacy in education settings, and in advocating for critical changes to mathematics education. We have worked extensively with prospective and practicing teachers of mathematics, instructors, and faculty members to challenge traditional, dominant educational structures. This has included workshops (e.g., in which we collectively learn about and reflect upon White supremacy culture in our work) and multi-year partnerships in which we explore data and its use in equity work.

In our teaching and in our research, we seek opportunities to reflect critically on our social and professional positioning in society broadly, and mathematics specifically. We feel it is important to ask who benefits from what we share and who has a voice (or is silenced) (Idahosa & Bradbury, 2020; Liamputtong, 2007; Smith, 2012). In prior work, we have endeavored to better understand the experiences of postsecondary mathematics instructors and mathematics teacher educators engaging in equity work, many of whom benefitted from dominant mathematics culture, in hopes of understanding what might move instructors to be vulnerable and critically reflexive in their practice, and ultimately to take action for equity (Anderson et al., 2022; Funk et al., 2025; Hagman et al., 2025). We hope that this study similarly gives teachers an opportunity to reflect critically on what their role could and should be to advance equity.

We recognize that the majority of the teacher workforce is White. By describing the experiences of White teachers responding to equity, we are not aiming to minimize or make invisible BIPOC voices, nor are we showcasing White teacher leaders as saviors of BIPOC students. Rather, we aim to evoke emotion and reflection by sharing how White teacher leaders aspire or fail to use their power responsibly in consideration of the experiences of BIPOC individuals. We specifically focus

on participants' responses during the 2020 pandemic. Although we use the "dual pandemics" of COVID-19 and racial violence (Jones, 2021) as the focus of this work, we recognize that for BIPOC communities, racial violence has been an ongoing phenomenon and not just a recent crisis. However, 2020 brought additional awareness of racial violence and inequities built into our society, prompting overdue conversations within and beyond education about our roles in addressing system changes.

Teacher Leadership and Equity

In their review of the literature on teacher leadership, Wenner and Campbell (2017) note a dearth of literature about social justice, equity, and teacher leadership, as well as a lack of researchers defining what they mean by *teacher leaders*. Our conceptualization of teacher leadership is based on Criswell et al. (2018): "a teacher leader must assist those operating at different levels of the system to see practices in ways that will allow them to make sense of innovations and doing this [sic] in a manner that is collegial and not controlling" (p. 832), along with Criswell et al.'s conception of "*teacher leader as reflective practitioner*" (p. 816, italics in original). We also add Harris's (2003) suggestions that "leadership is part of the interactive process of sense-making and creation of meaning that is continuously engaged in by organisational members … Leadership is about learning together and constructing meaning and knowledge collectively and collaboratively" (p. 314). This view of leadership is echoed by Bowman et al. (2004):

> Education leaders guide their colleagues by engaging in collective conversations, invoking symbolic gestures that reveal relationship, modeling professionalism beyond the label of one's role, championing evocative ideas in both the classroom and the workplace, and being "in influence" as opposed to being "in control." (p. 188)

Further, we employ a broader categorization of teacher leaders than some others in the literature (e.g., Wenner & Campbell, 2017; York-Barr & Duke, 2004) by including both PK–12 classroom teachers with formal or informal leadership roles and PK–12 professionals (including math coaches and district mathematics supervisors) who directly support teachers.

Teacher leaders have the potential to become key change agents in creating and sustaining more equitable schools (Criswell et al., 2018; Jacobs, Beck, & Crowell, 2014; Milner IV et al., 2015). COVID-19 and concurrent racial turmoil have generated opportunities for educators to center equity and antiracism in education spaces (Fletcher, 2023; Mincu & Granata, 2021). The U.S. Department of Education called for school systems to respond to the pandemic with a focus on equity:

> We have a rare moment as a country to take stock and to begin the hard work of building our schools back better and stronger—with the resolve necessary to ensure that our nation's schools are defined not by disparities but by equity and opportunity for all students. (U.S. Dept. of Education, Office for Civil Rights [2021] in response to Biden's Executive Order 14000 during the COVID-19 pandemic)

We sought to understand how teacher leaders conceptualized equity and their own agency in impacting equitable mathematics teaching and learning. These conceptualizations are grounded in literature (e.g., Gutiérrez, 2012) but applied in the real contexts of post-2020 school systems.

Mathematics as "Neutral" Narrative and Conceptualizing Equity in Mathematics Education

Mathematics is an inherently social, cultural, and political practice. However, the dominant narrative in our society is that mathematics is neutral or removed from social, cultural and political spheres (Lue & O'Neal Turner, 2020; Martin, 2013). This "math is neutral" narrative is a function of Whiteness (Gutiérrez, 2017; Martin, 2013; Rubel & McCloskey, 2019). Gutiérrez (2017) describes myriad ways in which mathematics, and specifically mathematics teaching, upholds Whiteness in our society: from curricula that emphasize Eurocentric mathematics to the widely held belief that mathematical ability is an innate, fixed proxy for intelligence (and thus superiority). She argues that these narratives are tacitly transmitted in the teaching of mathematics; therefore, "mathematics teaching is a highly political activity" (p. 18). Mathematics teachers play a key role in how students experience mathematics. Teachers' conceptions of equity and intentions to center equity (or not) in their activities have broad implications. Those engaging in equity work must develop knowledge that allows them to

navigate and interrogate existing structures, such as high-stakes testing or student tracking, in coordination with others for the purpose of reimagining or reinventing such structures (Gutiérrez, 2017). Mathematics teacher leaders, specifically, are key power brokers in education. Thus, they are uniquely positioned to engage in equity work.

There are many ways to conceptualize equity in mathematics education (Vithal et al., 2023). We ground our study in Gutiérrez's (2002, 2009, 2012) framework that considers equity along two major axes (dominant and critical) with four major dimensions (access, achievement, identity, and power). *Access* is related to students having sufficient resources available to support their learning of mathematics and participation in school. *Achievement* is the dimension most commonly used to measure equity, often using test scores to document student understanding and mastery of mathematics learning objectives. As others have documented, focusing on achievement gaps can reinforce deficit views of BIPOC students (Martin, 2013). Access and achievement lie on the dominant axis of equity (as they are the primary focus of dominant reform efforts). However, mathematics education needs to focus on the critical axis of equity just as much, if not more, than the dominant axis of equity. The critical axis of equity contains two components (*identity* and *power*). *Identity* is broadly about students' identities, both inside and outside the mathematics classroom, and how students' identities and their perceived social markers impact their learning experiences. This component includes mathematical identity, which is inextricably connected with an individual's identities inside and outside of the classroom (Lue & O'Neal Turner, 2020, p. 144). *Power* looks at whose voices are heard in the classroom, whose ideas are elevated, who decides what counts as knowledge and understanding, and students' empowerment to use mathematics toward social justice aims.

Responding to Equity

Similar to LaTona-Tequida et al. (2022), we draw from the work of professional noticing (Jacobs et al., 2010) to capture teacher leaders' noticing of equity in relation to students' mathematical access, achievement, identity, and power (Gutiérrez, 2009, 2012). We use the Attend-Interpret-Respond (AIR) framework (Jacobs et al., 2010) to conceptualize three ways in which teacher leaders may notice equity-related concerns. First, teacher leaders' *attention* is characterized by judgment-free observations about students' mathematical access, achievement, identity, and power within and across multiple layers of the educational system. Second, teacher leaders' *interpretations* are characterized by their judgments and explanations of the observations to which they have attended. Third, teacher leaders' *responses* are characterized by their specific actions to address equity-related concerns.

Methods

Inequity in mathematics education is a critical global problem (Vithal et al., 2023), and thus a crucial focus of inquiry. Critical qualitative methods are necessary to capture the nuances of the complex issues of equity in education, how educators and students navigate those complexities, and how these issues are inextricably linked with the identities of those involved (Vithal et al., 2023). Use of poetry to explore such complex issues can lead to deeper understandings of transformational mathematics teaching (Martinez et al., 2023).

Poetic transcription is a qualitative, critical research method used to represent the voiced experiences of participants (Glesne, 1997; Illingworth, 2022). It has roots in found poetry, "a process which takes existing texts and re-mixes their content to create original pieces of poetry" (Illingworth, 2022, p. 81). Researchers have used poetry in multiple ways although the "best" poetic inquiry focuses on experiences within an affective, experiential domain (Prendergast, 2009, p. 546). Poetry can convey not only ideas and concepts but also emotions. More traditional data analysis techniques are often designed to extract facts, not necessarily to convey the salient emotions of the participants. However, when considering issues of racial equity and the role of the education systems in perpetuating versus challenging inequities, emotion plays a role in the reactions and decisions of the people involved. Thus, poetic transcription has the potential to illuminate the experiences of teacher leaders and district leaders in authentic ways that help researchers, and teachers themselves, understand their complex and messy experiences, in turn advancing equity in mathematics education, particularly along the critical axis.

In this study, we used poetic transcription as part of a secondary analysis of semi-structured interviews with 18 Nebraskan mathematics teacher leaders and district leaders from November 2020 to January 2021, at the height of the COVID-19 pandemic. All participants either worked as full-time teachers or in leadership roles outside of the classroom (e.g., math coach, district math coordinator). One clear limitation to our study focused on racial equity is that none of our participants identified as racially marginalized although we want to emphasize that equity work is the responsibility of all of us, not just those with minoritized identities. Further, the teacher workforce in Nebraska has remained approximately 95% White since such data were made publicly available in 2005, so the problematic lack of racial diversity in our study reflects the problematic lack of racial diversity in Nebraska's teacher workforce in contrast to the 38% BIPOC student population. We centered our findings around those leaders whose interviews described a response to equity (beyond simply attending or interpreting) along both the dominant and critical axes of equity.

This study is part of a larger Noyce Track 4 project (Yow et al., 2021) studying K–12 STEM teacher leadership. Although the interview questions were oriented around a number of leadership-related concepts, we focused our analysis on the interview questions about how leaders experienced inequities and worked toward more equitable school systems. We extracted responses to these questions, as well as other mentions of equity in the interviews, and independently coded the responses using Gutiérrez's Dimensions of Equity (Gutiérrez, 2012) and the AIR framework (Jacobs et al., 2010). We then met to reconcile these codes. From this analysis, we identified four teacher leaders and district leaders who responded to equity in ways that emphasized both the dominant and critical axes of Gutiérrez's framework (See Tables 1 and 2; names included are pseudonyms. Names beginning with "T" represent full-time teachers and names beginning with "D" represent district leaders. Note that Teagan and Dune identify as White women, and Terran and Dawn identify as White men) The other 14 educators either did not address the critical axis of Gutiérrez's framework or did not discuss responses to equity (instead only focusing on attending to or interpreting contexts involving equity). Because we wanted to highlight educators' responses or actions beyond the dominant axis of Gutiérrez's framework, we chose to highlight the reactions from these four leaders. Using the coded segments from the four leaders, we conducted an additional open thematic analysis to develop themes about equity and noticing. In the process we paid particular attention to what teachers felt was equitable/inequitable (e.g., structures, cultural ways of doing) and the emotions they felt or actions they described taking in response to these inequities. Three themes that stood out included tracking, combating deficit perspectives, and teacher agency. We then crafted collective poems via poetic transcription, juxtaposing segments from different interviews to form a type of conversation around responses to systems of oppression. Through this poetic format, we invite readers into conversation about the reality and perceptions of well-intentioned White educators grappling with inequities in education.

To poetically transcribe the data, we each individually read through the coded segments and extracted words or phrases that could convey the meanings of each segment. We then (separately) crafted these words and phrases into poetic stanzas for each teacher leader. Next, we met and shared our poems with each other, then collectively created a combined poem (Figure 1) via many iterations that featured stanzas from our individual poems, new stanzas, and combined stanzas. We also arranged the stanzas in a coherent order that conveyed the major themes we identified. We used boldface text to draw attention to unjust or inequitable systems or structures identified by teachers, italics to convey dialogue recounted by teachers, uppercase to emphasize emotional drivers for change, and indentation for teachers' responses to (in)equities.

Symbolically, we felt that boldface offered a means to make more visible the inequitable systems that are often described as invisible. Similarly, we felt that uppercase words both attracted visual attention and strengthened the weight of an emotion, e.g., we felt that "EMPOWER" more strongly communicated boldness and resistance—we aspired to evoke the emotions of a protester holding up a sign written in uppercase, shouting at a demonstration. Lastly, we chose italics in dialogue as a typical means of communicating the leaders' verbatim speech, and indentation as a way to set apart these leaders' actions as distinct steps forward. As an example of our collective poetic transcription process, all of us included the "ripping off the band aid" excerpt as a clear teacher leader response, but in different positions. As another example of our collective poetic transcription process, one author included a stanza about teacher agency—"Shifting to hybrid - some teachers regressed / to less than ideal instructional practices / But they don't have a choice right now." We ultimately decided not to include that stanza in the final poem because it did not have a clear context, such as particular injustices or inequitable structures. We also considered different formats for the poem, initially crafting themed sections to align with the equity and

noticing themes we coded; however, as we sought to combine different stanzas, we realized we could position them to be in dialogue with each other. Extracting evidence of actions using the AIR framework, we deliberately chose to end the poem with themes of hope and empowerment from teachers for students to reinforce our focus on leaders' responses to inequities. To engage in member-checking, we shared a draft of the manuscript with the four leaders to invite their reactions and actions. We also invited teachers to take part in the poem construction process although the timing did not work out for them to participate. All four participants provided feedback on the manuscript, including the poem. One participant expressed discomfort with the positioning of one of the stanzas, crafted from their interview, because its positioning relative to others connoted an emphasis on race more than they originally intended. Accordingly, we moved the stanza and shared the revised poem with the participant; they were satisfied with the revised version of the poem.

Table 1
Code Frequencies by Gutiérrez's Dimensions of Equity

Participant	Access	Achievement	Identity	Power
Terran	3	2	1	0
Teagan	4	3	1	3
Dune	2	4	1	0
Dawn	2	0	1	2
Other 14 Participants	24	9	8	0
Total	**35**	**18**	**12**	**5**

Table 2
Intersection of AIR Framework and Gutiérrez's Dimensions of Equity for Selected Participants

	Access	Achievement	Identity	Power
Attend	Teagan Dune	Dune		Dawn
Interpret	Teagan Dune Dawn	Terran Teagan Dune	Dune	
Respond	Terran Teagan	Dune	Terran Teagan Dawn	Teagan Dawn

Findings: The Poem

In this work we sought to explore the central research question: How did mathematics teacher leaders and district leaders *respond* to concerns surrounding equity within the dominant and critical axes of equity during a global pandemic and social unrest? In Figure 1, we share the poem as our findings before reflecting on how the structure and content of the poem add nuance to multiple themes in our discussion section. These themes include combating systems of oppression in mathematics education, the drive for action versus mathematics educator agency and safety, hope and skepticism in mathematics education change efforts, and dominant and critical axes of equity in mathematics education.

Figure 1

Poetic Transcription of How Mathematics Teacher Leaders and District Leaders Responded to Concerns Surrounding Equity

Teacher Leader Teagan:
At a very young age we **track**.
we create the **haves** and the **have-nots**.
It's just horrible - why do we even need that?

District Leader Dune:
There are assumptions **students have gaps**
I was having a conversation with a teacher
*"Well, those are my **low students**. These kids can't do that"*
       I just ripped the band aid off
I said: *"Do your kids know that you define them that way? How does that make them feel?"*

District Leader Dawn:
I need to be willing to PUSH on people
stop trying to go around to make changes
towards more equity
Just be very direct:
      No, this is why we're doing this,
        so stop doing that.

District Leader Dune:
We're still feeling like it's not safe to push
We've worked for years
        to stamp out **tracking**
      To stamp out **ability grouping**.
We've regressed . . . I guess we never really left it.

Teacher Leader Teagan:
I want sutdents to learn mathematics
      through the lens of social justice.
Expose students to something they don't know exists
Looking at **mortgage denial rates based on race**
       EMPOWER them to act
But in a district, you have to make sure everyone is okay with what you do:
      Go through proper channels.
    Include all stakeholders in district-level
        decisions.

Reading in the news of **teachers getting fired for including social justice in their class**:

    I have wanted to take more action steps
    for equity but haven't.

District Leader Dawn:
You know, **our school systems are designed for middle class White folks** to be successful

Teacher Leader Terran:
Suburban communities want to keep things the way they are.
They're comfortable. Their kids are successful.
Their test scores are great.

Policy swings back and forth,
placating political extremes
Yet the pendulum **pushes for career readiness.**
Predicting career trajectories
for the economically disadvantaged.
Making draconian choices about kids' futures.

District Leader Dawn:
This summer's uprisings opened up a lot of
conversations around equitable school structures
and instruction.
      We gave it lip service before

But the conversation has shifted this year
"no, we really need to do something"
opened up some space
     for a little more direct conversations
     we're making some movement

We'll see if in a year or two
if it's still happening
but it gives me HOPE.

District Leader Dune:
We're not really into the grit of the equity
conversation yet.
I hope we get there.
I hope that sticks around after the pandemic.

Teacher Leader Teagan:
My CHALLENGE to administration this year:
     hear the stories of students
       in our building
Then take action steps based on those.

Discussion

This poem shares the experiences of teacher leaders who have benefitted from the current system. Through our interviews with White teacher leaders and district leaders, we wanted to understand if and how they are acting as allies or seeking to disrupt dominant White supremacist traditions in education. Our poetic transcription reflects the tensions of White folx raised in a White supremacist culture trying to dismantle systems of oppressions (Love, 2023).

Some mathematics leaders felt a tension characteristic of White fragility—a desire for comfort contrasted with the discomfort of acting, e.g., "I need to be willing to push" contrasts with "we're still feeling like it's not safe to push"; "I have wanted to take more action steps / for equity but haven't." These tensions are connected to the desire to push against the mythical neutrality of mathematics (Gutiérrez, 2017; Lue & O'Neal Turner, 2020; Rubel & McCloskey, 2019). By focusing on actions (the *respond* part of the AIR framework), we were looking for how White mathematics leaders may have been working to dismantle systems of oppression in mathematics education.

Combating Systems of Oppression in Mathematics Education

The mathematics teachers and district leaders represented in our poem responded to mathematical (in)equity by challenging the status quo and racial or economic disparities upheld in their communities. Teagan described how teachers could use their power in the classroom to respond to systems of oppression. They described a desire to empower students through social justice mathematics lessons. Dune, a district leader, describes collaborative efforts to "stamp out" tracking and ability grouping in mathematics. We emphasized the conversation Dune recollected having with a teacher, in which they "ripped the band aid off," as a striking response to Teagan's question: "Why do we even need that [tracking]?" Using deficit language to describe students is symptomatic of as well as reinforces White supremacist narratives in mathematics (e.g., meritocracy, that mathematics ability is fixed). Thus, through their response Dune explicitly challenged this hegemony, even though they knew that doing so may have elicited an emotional (hurt) response from the teacher they challenged. Although we do not know the identity of the teacher they challenged, such a response by Dune suggests that they are willing to combat the White fragility of their peers in service of supporting students.

We also feel some tension in the ways in which some of these leaders may be understanding or challenging systems of oppression. Although Dawn and Terran called out White supremacy in education ("our school systems are designed for middle class White folks to be successful" / "Suburban communities want to keep things the way they are"), Dune explicitly did not want to position their words ("we're not really into the grit of the equity / conversation yet") around the stanzas calling out race and racism. Further, Dune elaborated that they do not feel that their peers are making deficit comments about "low students" based on race or gender identities. We wonder if this hesitancy is indicative of White discomfort; explicitly the desire to not appear as if they are calling out their peers as racist or sexist.

Drive for Action Versus Mathematics Educator Agency and Safety

In stanzas 3–5, we used the words of Dawn, Dune, and Teagan to form a dialogue of a prevailing tension between mathematics educators' drive to take action for equity and feeling a lack of agency or safety to do so. Mathematics educators engaged in this work feared consequences of their actions, such as losing their job or political backlash from their communities. These educators may want to do something—"I need to be willing to push" (Dawn)—but struggle with a collective feeling that "it's not safe to" (Dune). They may also feel a sense of defeat or frustration in their attempts to change dominant systems ("I guess we never really left it"; Dune). We structure this dialogue to showcase that this tension was felt by district leaders as well as teachers, albeit at different levels of influence on mathematics education. For Teagan, fear and incredulity, prompted by stories of teachers "getting fired" may have prevented them from responding to their desire to include more social justice topics in their classroom. Dune feels this tension either personally or collectively ("we're still feeling…"), which prevents the success of larger structural changes to mathematics education at the school or district level (e.g., attempts to stop tracking). Dawn recognizes that to take action for equity, they need to be less comfortable, more

courageous and more direct in conversations with others, rather than "trying to go around" to enact change in mathematics education.

Hope and Skepticism in Mathematics Education Change Efforts

Throughout the mathematics teacher and district leaders' interviews, we saw hope that equity work will continue beyond the dual pandemics of 2020, balanced with various degrees of skepticism. Changing education systems is hard, and any one teacher leader lacks sufficient power to change the broader educational system. The improvement work must be approached collectively. Dune hopes "we get there" but notes that "we're not really into the grit of the equity conversation yet." The hope is offset by noting how long the leaders in the district have been working to eliminate tracking and ability grouping in mathematics, and how quickly those inequitable structures returned during the dual pandemics, showing that "we never really left it." Dawn shared that the social unrest in 2020 opened up new conversations about equity that in the past had been given "lip service." Dawn commented that "the conversation has shifted this year… we'll see in a year or two if it's still happening, but it gives me hope." Change is often slow in education, but acknowledging that equity is a complex problem and having honest conversations about the problems and potential solutions are promising steps toward positive changes in mathematics education.

Dominant and Critical Axes of Equity in Mathematics

The poem's exchange between Dawn and Terran (in the second half) emphasizes the educators' awareness of the systemic complexities of equity and education—specifically, how the educational system is structured to maintain dominant Western ideologies that benefit White communities. Dawn calls attention to racism inherent in the design of the U.S. education system, and Terran calls out how focusing on achievement ("test scores") and economically driven motives perpetuates inequalities. We highlight Terran's response as an implicit damning of policies that follow an interest convergence (Bell, 1980) argument: Terran describes how a focus on "career readiness" (an economic imperative of the dominant society) "forces" draconian choices that impact economically disadvantaged students.

In order to change systemic inequities, we need to go beyond supporting students within the dominant system (e.g., improving their mathematics test scores, securing their economic well-being) to enacting courageous, imaginative, and critical changes. Such changes should foster a system which embraces people's identities and empowers those who have been marginalized to make changes that imbue power to those who have the least. In our analysis, two out of 18 participants had responses that we coded with power, showcasing that most responses did not address the power of students— particularly BIPOC students—in the educational system. However, given the importance of the critical axis to equity work, we emphasize these responses by including them in the poem. Teagan brings up issues of power in two substantial ways: they describe their desire to use mathematics curriculum as a way to empower students to take action for themselves, then issue a challenge to administration (those who may be viewed as the ones in power) to take action based on the stories as told by students. Centering educational decisions on the needs of students is not new (Dewey, 1902), but public schools in the U.S. are set up with structures that have little space for student stories. Looking at systemic improvement via the critical axis prompts us to take an anti-deficit stance that starts from students' identities and builds opportunities to learn based on students' strengths and goals; this type of stance demands creativity, empathy, and courage.

Conclusion

The discussions around and responses to inequities that we investigated echo similar themes in conversations about equity in other spaces (e.g., Lolkus et al., 2023). The U.S. educational system was indisputably founded in White supremacist culture, which still permeates the system and needs to be challenged. At the same time, equity is under attack at all levels of government: in 2025 (at the time this manuscript was submitted), the U.S. government terminated an overwhelming majority of educational initiatives that support historically marginalized communities (e.g., Mehta, 2025). These attacks, alongside long-standing racist educational structures and policies, contribute to the pressure teachers may feel to "keep

things the way they are," e.g., by engaging in performative "lip service" equity efforts or excluding social justice themes from mathematics lessons. Certainly, for White teachers, it is easier to maintain the status quo, where people can pretend mathematics is neutral and schools continue inequitably tracking students. But averting the inequities driven by our White supremacist culture does not lead to the improved mathematics teaching and learning necessary for all students to have equitable opportunities for potential careers. Rather, teachers must acknowledge these inequities and choose to be brave. But importantly, teacher leaders, district leaders, and those in higher positions of power should support this bravery. Equity work should not be done in isolation, but in community. Especially in environments where teachers face explicitly hostile policies, engaging in such work may need to take the form of creative insubordination (Gutiérrez, 2015).

As DiAngelo (2018) writes, "interrupting racism takes courage and intentionality" (p. 153). The mathematics leaders in this study have shown continued dedication to equity by learning to critique, challenge, and navigate inequitable systems in individual and structural ways, such as working to eliminate mathematical tracking of students. Courageously, these leaders have named and spoken up about the inequities within mathematics and broader educational contexts. Furthermore, these leaders have "ripped the band aid off" and are (cautiously) eager and optimistic about engaging in accountability for themselves and the systems in which they work. These mathematics teachers and leaders give us hope for the potential of mathematics teachers and leaders to engage in meaningful equity work. In addition, as we express with juxtaposition in the poem, district leaders and teacher leaders can work with teachers to center the critical axis of equity in combating systems of oppression, particularly by addressing deficit thinking toward students and in eliminating systems of tracking in mathematics. Advancing equity comes with risks, and we recognize that these risks are rising, but our society needs teachers and leaders with power to be courageous, creative, passionate, and dedicated to standing up against racist systems for the benefit of all students.

References

Anderson, R., Weiland, T., Males, L. M., & Quaisley, K. (2022). How four white MTEs attempted to acknowledge, act, and hold ourselves accountable for incorporating antiracism into graduate courses for teachers. *Teaching for Excellence and Equity in Mathematics*, *13*(1), 60–70.

Applebaum, B. (2017). Comforting discomfort as complicity: White fragility and the pursuit of invulnerability. *Hypatia, 32*(4), 862–875. http://www.jstor.org/stable/45154085

Baker, C. K., Livers, S. D., Hjalmarson, M. A., Saclarides, E. S., Harbour, K. E., & Brown, K. (2024). Research publication and design trends in mathematics-specific teacher leadership: A systematic review. *School Science and Mathematics,* [online first], 1-14. https://onlinelibrary.wiley.com/doi/full/10.1111/ssm.12661

Bell, D. A. (1980). Brown v. Board of Education and the interest-convergence dilemma. *Harvard Law Review*, *93*(3), 518–533.

Bowman, R. F. (2004). Teachers as leaders. *The Clearing House, 77*(5), 187–189. https://www.jstor.org/stable/30189895

Cintron, S. M., Wadlington, D., & ChenFeng, A. (2021). *A pathway to equitable math instruction: Dismantling racism in mathematics instruction.* STRIDE. 1–82. https://equitablemath.org/wp-content/uploads/sites/2/2020/11/1_STRIDE1.pdf

Criswell, B. A., Rushton, G. T., McDonald, S. P., & Gul, T. (2018). A clearer vision: Creating and evolving a model to support the development of science teacher leaders. *Research in Science Education, 48*(4), 811–837. https://doi.org/10.1007/s11165-016-9588-9

Dancy, M., & Hodari, A. K. (2023). How well-intentioned white male physicists maintain ignorance of inequity and justify inaction, *International Journal of STEM Education, 10*(45), 1-29. https://doi.org/10.1186/s40594-023-00433-8

DeBray, E., Finnigan, K. S., George, J., & Scott, J. T. (2023). Re-centering civil rights in the reauthorization of ESEA: An equitable, ecological, evidence-based framework. *Education Policy Analysis Archives, 31*(95). https://doi.org/10.14507/epaa.31.7993

Dewey, J. (1902). *The child and the curriculum.* The University of Chicago Press.

DiAngelo, R. (2018). *White fragility: Why it's so hard for white people to talk about racism.* Beacon Press.

Fletcher, N. (2023). Designing a Mathematics Teacher Education Course for Equity and Antiracism. *Teaching for Excellence and Equity in Mathematics*, *14*(2). 47–59. https://journals.charlotte.edu/teem/issue/view/136

Funk, R., Bennett, A. B., Fantin-Hardesty, K., Tremaine, R., Callahan, K. M., Quaisley, K., Smith, W. M., Courtney, J., Hagman, J. E., & Hill, P. W. (2025). Instructors' vulnerability, curiosity, and (dis)trust of data informing critical transformations in mathematics. *Proceedings of the 27th Annual Conference on Research in Undergraduate Mathematics Education*, Alexandria, VA.

Gilson, E. (2011). Vulnerability, ignorance, and oppression. *Hypatia, 26*(2), 308–332. https://doi.org/10.1111/j.1527-2001.2010.01158.x

Glesne, C. (1997). That rare feeling: Re-presenting research through poetic transcription. *Qualitative Inquiry, 3*(2), 202–221. https://doi.org/10.1177/107780049700300204

Gutiérrez, R. (2002). Enabling the practice of mathematics teachers in context: Toward a new equity research agenda. *Mathematical Thinking and Learning, 4*(2–3), 145–187. https://doi.org/10.1207/S15327833MTL04023_4

Gutiérrez, R. (2009). Framing equity: Helping students "play the game" and "change the game." *Teaching for Excellence and Equity in Mathematics, 1*(1), 5–7. https://rb.gy/afjh3j

Gutiérrez, R. (2012). Context matters: How should we conceptualize equity in mathematics education? In B. Herbel-Eisenmann, J. Choppin, D. Wagner, & D. Primm (Eds.) *Equity in discourse for mathematics education (pp. 17033). Springer.*

Gutiérrez, R. (2015). Risky business: Mathematics teachers using creative insubordination. In Bartell, T. G., Bieda, K. N., Putnam, R. T., Bradfield, K., & Dominguez, H. (Eds.), *Proceedings of the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 679–686). : Michigan State University.

Gutiérrez, R. (2017). Political conocimiento for teaching mathematics: Why teachers need it and how to develop it. In S. E. Kastberg, A. M. Tyminski, A. E. Lischka, & W. B. Sanchez (Eds.), *Building support for scholarly practices in mathematics methods* (pp. 11–37). Information Age.

Gutstein, E. (2016). "Our issues, our people – math as our weapon": Critical mathematics in a Chicago neighborhood high school. *Journal for Research in Mathematics Education, 47*(5), 454–504. https://www.jstor.org/stable/10.5951/jresematheduc.47.5.0454

Hagman, J. E., Voigt, M., Bennett, A. B., Nicole, F., Bolick, M. A., Pai, L., Kress, N., Quaisley, K., Tremaine, R., Funk, R., Hill, P. W., & Samith. W. M. (2024). Experiencing tensions of nepantla with inner-departmental change groups. *Frontiers in Education, 9.* 1-14. https://doi.org/10.3389/feduc.2024.1454303

Idahosa, G.E. & Bradbury, V. (2020). Challenging the way we know the world: Overcoming paralysis and utilising discomfort through critical reflexive thought. *Acta Academica, 51*(1), 31–53. https://journals.ufs.ac.za/index.php/aa/article/view/4726/3895

Illingworth, S. (2022). *Science communication through poetry*. Springer. https://doi.org/10.1007/978-3-030-96829-8_5

Jacobs, J., Beck, B., & Crowell, L. (2014). Teacher leaders as equity-centered change agents: Exploring the conditions that influence navigating change to promote educational equity. *Professional Development in Education, 40*(4), 576–596. https://doi.org/10.1080/19415257.2014.896272

Jacobs, V. R., Lamb, L. L., & Philipp, R. A. (2010). Professional noticing of children's mathematical thinking. *Journal for Research in Mathematics Education*, *41*(2), 169–202. https://doi.org/10.5951/jresematheduc.41.2.0169

Jones J. M. (2021). The dual pandemics of COVID-19 and systemic racism: Navigating our path forward. *School Psychology*, *36*(5), 427–431. https://doi.org/10.1037/spq0000472

LaTona-Tequida, T., Ross, D. L., Vaughn, M., & Nickerson, S. D. (2022). *Equity-oriented experiences for emerging teacher leaders*. Paper presented to the annual meeting of the American Educational Research Association [Division K], San Diego, CA. 1-6. https://doi.org/10.3102/1894426

Liamputtong P. (2007). *Researching the vulnerable*. Sage. https://doi.org/10.4135/9781849209861

Lolkus, M., Cordero-Siy, E., & Harper, F. (2023). Gatekeeping in mathematics for social and racial justice: Reflections on a conversation among colleagues. *Teaching for Excellence and Equity in Mathematics, 14*(2), 60–69. https://journals.charlotte.edu/teem/article/view/1601

Love, B. L. (2023). *Punished for dreaming: How school reform harms black children and how we heal.* St. Martin's Press.

Lue, K., & O'Neal Turner, B. (2020). The stories we tell: Disrupting the myth of neutrality in math through counternarratives. *Journal of Folklore and Education, 7,* 136–146. https://jfepublications.org/wp-content/uploads/2020/09/Stories-We-Tell-from-TeachingforEquity2020-Final-14.pdf

Martin, D. B. (2013. Race, racial projects, and mathematics education. *Journal for Research in Mathematics Education, 44*(1), 316-333. https://doi.org/10.5951/jresematheduc.44.1.0316

Martinez, R., Carpenter, C., Johnson, K., Shirude, S., & Zhou, Z. (2023). Poetic mathematical knowledge, cultural connections and challenging epistemic injustice. *Teaching for Excellence and Equity in Mathematics, 14*(2), 23–30. https://journals.charlotte.edu/teem/issue/view/136

Mehta, J. (21 March 2025). How the Education Department cuts could hurt low-income and rural schools. National Public Radio. https://www.npr.org/2025/03/21/nx-s1-5330917/trump-schools-education-department-cuts-low-income

Milner, H. R., IV., Laughter, J., & Childs, J. (2015). Developing teacher leadership for equity. In M. A. Khalifa (Ed.), *Handbook of Urban Educational Leadership* (pp. 85–90). Rowman & Littlefield.

Mincu, M., & Granata, A. (2021). Teachers' informal leadership for equity in France and Italy during the first wave of the education emergency. *Teachers and Teaching*, 1–21. https://doi.org/10.1080/13540602.2021.1986695

Office for Civil Rights. (2021). *Education in a pandemic: The disparate impacts of COVID-19 on America's students.* U. S. Department of Education. https://bit.ly/4lLGYLH

Prendergast, M. (2009). "Poem is what?" Poetic inquiry in qualitative social science research. *International Review of Qualitative Research, 1*(4), 541–568. https://doi.org/10.1525/irqr.2009.1.4.541

Rubel, L., & McCloskey, A. V. (2019). The "soft bigotry of low expectations" and its role in maintaining white supremacy through mathematics education. *Critical Mathematical Inquiry. Occasional Paper Series*, *2019*(41), 113–128.

Smith, L. (2012). *Decolonizing methodologies: Research and indigenous peoples*. University of Otago Press.

Wenner, J. A. & Campbell, T. (2017). The theoretical and empirical basis of teacher leadership: A review of the literature. *Review of Educational Research, 87*, 134–171. https://doi.org/10.3102/0034654316653478

York-Barr, A. J., & Duke, K. (2004). What do we know about teacher leadership? Findings from two decades of scholarship. *Review of Educational Research, 74*, 255–316. https://doi.org/10.3102/00346543074003255

Yow, J. A., Criswell, B. A., Lotter, C., Smith, W. M., Rushton, G. T., Adams, P., Ahrens, S., Hutchinson, A., & Irdam, G. (2021). Program attributes for developing and supporting STEM teacher leaders. *International Journal of Leadership in Education*, 1–24. https://doi.org/10.1080/13603124.2021.2006794

Discussion And Reflection Enhancement (DARE) Post-Reading Questions

1. How might the various intersecting facets of your identity alongside the social and historical contexts of your school institution influence your attention to, interpretation of, and actions in responding to issues of equity in mathematics education?

2. How can teachers serve as leaders (with formal titles or with informal activities) to promote more equity in mathematics teaching and learning in your context?

3. How might teachers center the critical axis of equity in combating systems of oppression, including deficit thinking toward students and the devastating practices of academic tracking in mathematics?

4. How can we continue the conversations and move toward more equitable teaching and learning mathematics in today's political climate?

5. How can we harness feelings of discomfort and contradiction to move us toward positive changes in mathematics education?